

# GrainWorld

*a grains and livestock conference*

2001

Winnipeg, Manitoba  
The Lombard Hotel





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*a grains and livestock conference*



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# Grain World Organizing Committee

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Conference Chairman,  
CWB

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Conference Coordinator,  
CWB

**Deanna Allen**  
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**2000**



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# Greetings from Grain World Conference Chairman

**Brian White**

**Acting Vice-President,  
Market Analysis  
CWB**

**Winnipeg, Manitoba**

In the Bible, in the Book of Ecclesiastes, it says, "there is no new thing under the sun." I am given to think of this every year as we sit down to decide what "special topics" we should address on at the Grain World conference. The discussion of possible "new" topics to have in the program only serves to remind us that the same broad issues remain with us in agriculture year in and year out: things like production technology, marketing, and government agricultural policy. This year - not surprisingly - is no different.

However, one could make a pretty good argument that biotechnology has brought us something new - some would argue radically new - under the sun (both figuratively and literally). There are both scientific and consumer perception and behaviour aspects to the controversy over genetically modified organisms (GMOs), and they both have implications for the marketing of agricultural products. I am both an agricultural product marketer and a food consumer. Like most laypeople, I find the scientific discussion swirling around GMOs complex, confusing, and not always reassuring, while as a consumer one of my natural concerns is not to eat any foods that may turn out to be unhealthy for me in ways that are unknown beforehand. As an industry and as marketers of agricultural products, we need to understand the scientific arguments for and against GMOs and the consumer behaviour issues related to GMOs in order to be able to address the marketing issues in an intelligent and effective way. The opening panel at this year's

Grain World is one attempt to grapple with both the science and the implications for marketing of agricultural products.

One of the other big issues dominating the news this past year in Canada has been the dismal economic state of agriculture, and particularly Prairie agriculture. The impact on western Canadian farmers of production subsidies and export subsidies in other major producing countries and generally low grains and oilseeds prices - the latter largely a product of the former - has been to call into question the very viability of farming in Western Canada. Our closing panel, "Whither Western Agriculture?" will offer perspectives from the highest levels of the three Prairie provincial governments on where Prairie agriculture is headed and the role that government has to play in the context of an agricultural sector in crisis. Our closing speaker will bring a major farm leader's perspective to the same issues.

I hope you will enjoy your time at Grain World 2000, both the special topic and market outlook sessions and the opportunity to make and renew acquaintances and exchange views with industry colleagues. One thought - not new - to leave you with about agriculture. No matter how dismal the outlook at any given moment, we know it always has a bright future, because it has been with us for at least 10,000 years and will be with us now for as long as we are on this earth. And, as it says in Ecclesiastes, "the earth abideth forever." Amen to that.



## Message from the Minister of Agriculture and Agri-Food

The Honourable Lyle Vanclief

As Canada's Minister of Agriculture and Agri-Food, I would like once again to extend warm greetings to all those participating in the ninth annual Grain World conference in Winnipeg.

Agriculture has undergone significant change over the past few years, and these continue to be challenging times, especially in the grains and oilseeds sector. Grain World is an important venue for producers, industry representatives and government to discuss issues of importance to the future of the sector. A number of issues are facing the industry,

including changes to domestic transportation policy and developments around the production and marketing of genetically modified commodities. As well, the removal of trade distorting export subsidies and domestic subsidies by our major competitors, through the World Trade Organization, would create a level playing field and would improve the longer term price outlook for grains and oilseeds.

Forums such as this help to shape Canada's grain industry. Grain World has built its reputation on its ability to interpret and forecast market

trends here in Canada and around the world. That ability makes the conference a valuable source of informed thought on how best to maintain and further develop Canada's position as a global leader in grain. I am certain that the views and concerns that arise from this year's conference will make an important contribution to the future of the sector.

May you have a most productive and enjoyable meeting.

*Lyle Vanclief*



## Message from the Premier of Manitoba

Premier Gary Doer

It is my pleasure to extend a hearty welcome to all of you participating in the 9th Annual Grain World Conference in Winnipeg, Manitoba's capital city. The location of the head office of the Canadian Wheat Board and many major grain companies, who have worked in cooperation to sponsor this well-recognized, international event.

The agriculture industry has always been the backbone of Manitoba's economy and we have a world-class reputation for the

efficient production of quality grains, oilseeds and food products. International markets remain crucial to our continued success. Over the years, farming and related industries have undergone great change. I am confident that, by working together, our industry will continue to respond to challenges, remain innovative and seize the many opportunities available.

Since its inception, the conference has been recognized as providing valuable industry information and

discussion on the outlook for international agriculture. On behalf of our province and all Manitobans, I extend my best wishes for a successful conference and an enjoyable stay in our province.

*Gary Doer*



## Message from the Mayor of Winnipeg

Mayor Glen Murray

**I**t is my great pleasure, on behalf of my colleagues on City Council and all citizens of Winnipeg, to bring greetings to participants at the ninth annual Grain World Conference.

The millennium belongs to Winnipeg. We are ideally situated as a major gateway for trade, and Winnipeg is establishing itself as a critical transportation hub, with trucking increasing substantially along our Mid-Continental Trade Corridor through the United

States and into Mexico. Winnipeg has a strong agri-food base and a prosperous future in the growing food processing sector.

Once again, welcome, and best wishes for a successful conference.

**Glen Murray**

For those of you who are visitors, I hope you will take time out from your busy schedules to sample the many culinary, cultural and recreational opportunities Winnipeg offers. Our entertainment ranges from world class ballet and symphony to night clubs and bistros.

Monday, February 28

9:00 to 9:15 a.m.



## Welcome and Opening Remarks

Mark Lubosch

**M**ark Lubosch is Acting Deputy Mayor and Councillor for the North Kildonan Ward. He was elected in 1995-98 and re-elected in 1998-2002. Lubosch is a Member of Council on the Standing Policy Committee for Protection and Emergency Services, Council Standing Committee, Riverbank Management Committee,

East Kildonan Transcona Community Committee and Joint Committee of C.U.P.E. and Council.

Mr. Lubosch received a Bachelor of Arts in History/Psychology in 1991 from the University of Manitoba and a Bachelor of Arts in Sociology/Political Studies in 1989 from the University of Manitoba.

# Agri-World 2000 program

Sunday, February 27, 2000

7:00 - 10:00 p.m.

Registration and Reception  
The Lombard Hotel,  
Wellington Ballroom

Entertainment: Magician Brian Glow

Monday, February 28, 2000

7:30 - 8:45 a.m.

Breakfast with Guest Speaker

The Lombard Hotel,  
Wellington Ballroom

Canadian and  
International Outlook

Paul Jenkins

Deputy Governor, Bank of Canada

9:00 - 9:15 a.m.

Welcome/Opening Remarks

Winnipeg West  
and Midway Ballrooms

Mark Lubosch

Acting Deputy Mayor  
City of Winnipeg

9:15 - 10:45 a.m.

Panel: GMO's: Reality, Perception,  
and Marketing

Dr. E. Ann Clark

Associate Professor in Plant Agriculture,  
University of Guelph  
Guelph, Ontario

Lisa Jategaonkar

Manager, Communications  
and Public Awareness,  
Ag-West Biotech Inc.  
Saskatoon, Saskatchewan

Angus McAllister

Research Director,  
Envirionics International Ltd.  
Toronto, Ontario

William Hill

Managing Director Merchandising and  
Transportation Services,  
UGG  
Winnipeg, Manitoba

10:45 - 11:15 a.m.

Health Break

11:15 - 12:00 noon

Wheat Outlook

David Boyes

Market Analyst,  
Latin America and the Caribbean,  
CWB  
Winnipeg, Manitoba

12:15 - 2:15 p.m.

Luncheon with Guest Speaker

Your Humour Outlook:  
Overlooked or Looking Good?

David Zinger

Consultant, David Zinger & Associates  
Winnipeg, Manitoba

Tuesday, February 29, 2000

7:30 - 8:30 a.m.

Breakfast with Guest Speaker  
The Lombard Hotel,  
Wellington Ballroom

2000 years of Prairie climate -  
How reconstruction of the past can  
help predict future droughts

Dr. Gemal Chen

Associate Professor, Department  
of Mathematics and Statistics,  
University of Regina  
Regina, Saskatchewan

8:30 - 9:15 a.m.

Beef Outlook

Charlie Gracey  
Canadian Beef Grading Agency  
Calgary, Alberta

9:15 - 10:00 a.m.

Pork Outlook

Bill Oakley  
Maple Leaf Foods  
Toronto, Ontario

10:00 - 10:45 a.m.

Health Break

10:45 a.m. - 12:15 p.m.

Western Agriculture: Where to Now?  
The Honourable Rosann Wowchuk  
Minister of Agriculture and Food  
Province of Manitoba

The Honourable Dwain Lingenfelter  
Deputy Premier,  
Minister of Agriculture and Food  
Province of Saskatchewan

## Evening Reception & Banquet

6:00 - 7:00 p.m.

Reception

7:00 - 9:30 p.m.

Banquet with Guest Speaker

Stuart McLean

Host of CBC Radio's The Vinyl Café  
Toronto, Ontario

## Closing Luncheon

12:15 - 2:15 p.m.

Luncheon with Guest Speaker  
Canada's Agricultural Policy?

Bob Friesen

President,  
Canadian Federation of Agriculture  
Wawaesa, Manitoba

## Add-on Seminar

(separate registration required)

2:30 - 5:00 p.m.

Climate Change in Agriculture:  
Issues and Options

The Lombard Hotel  
Winnipeg West &

**Paul Jenkins**

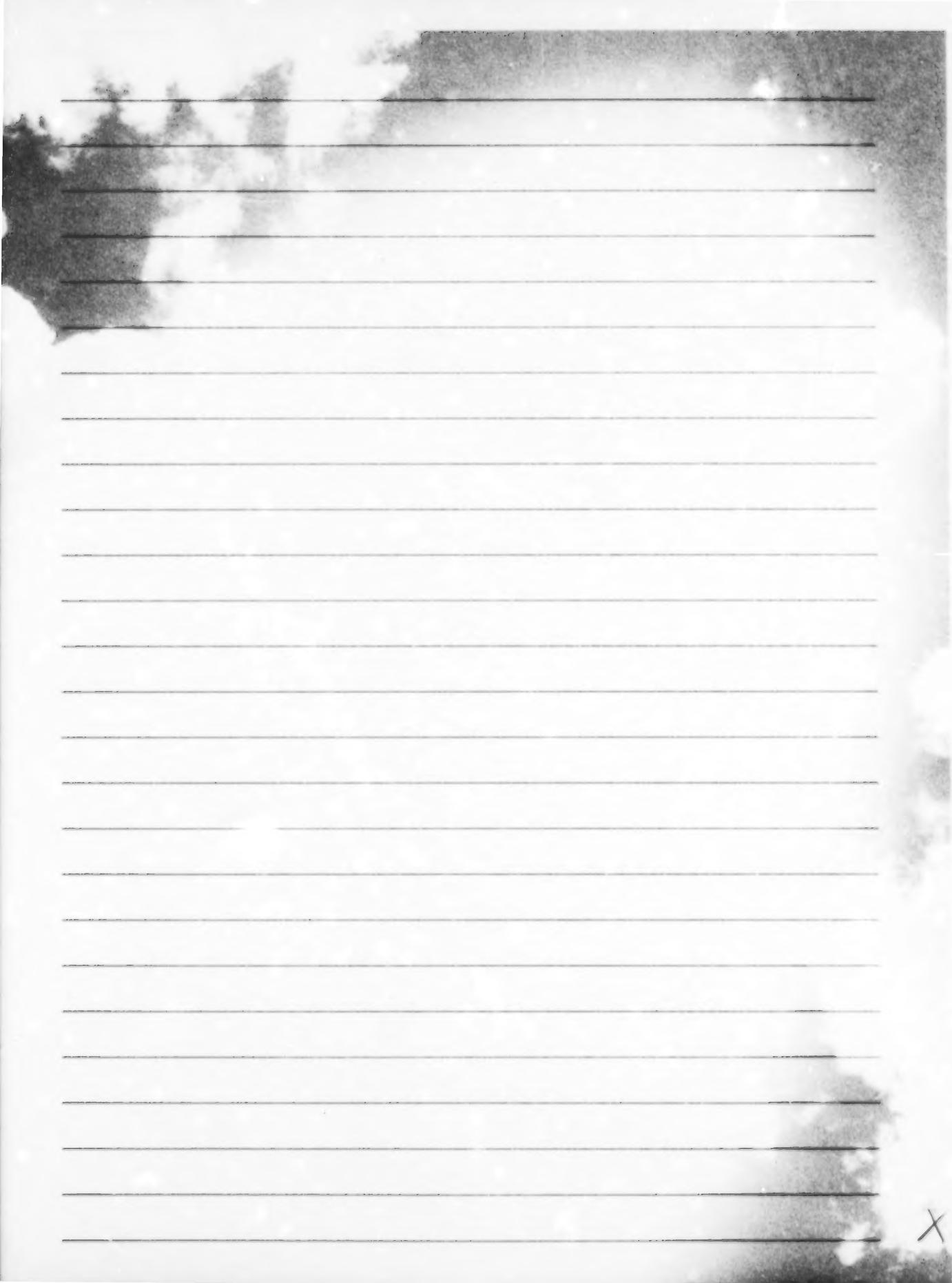
*Deputy Governor,  
Bank of Canada  
Ottawa, Ontario*

## Breakfast: Canadian and International Outlook

**P**aul Jenkins was appointed Deputy Governor of the Bank of Canada in March 1992. Mr. Jenkins is responsible for the Bank's analysis of international economic and financial issues and their relationship to monetary policy. He also has responsibilities relating to the Bank's public communications.

Born in St. Catharines, Ontario, Mr. Jenkins graduated from the University of Western Ontario in 1971 with a Bachelor of Arts in Economics. He then attended the London School of Economics and Political Science, where he received a Master of Science degree in Economics in 1972. In 1981-82, he continued his studies in economics at Princeton University.

Mr. Jenkins joined the Bank of Canada in 1972 as an economist with the Research Department. In 1978, he moved to the Department of Monetary and Financial Analysis and was named Deputy Chief of the Department in 1983. He became Chief of the Research Department in 1984 and was made an Advisor to the Governor in January 1989.



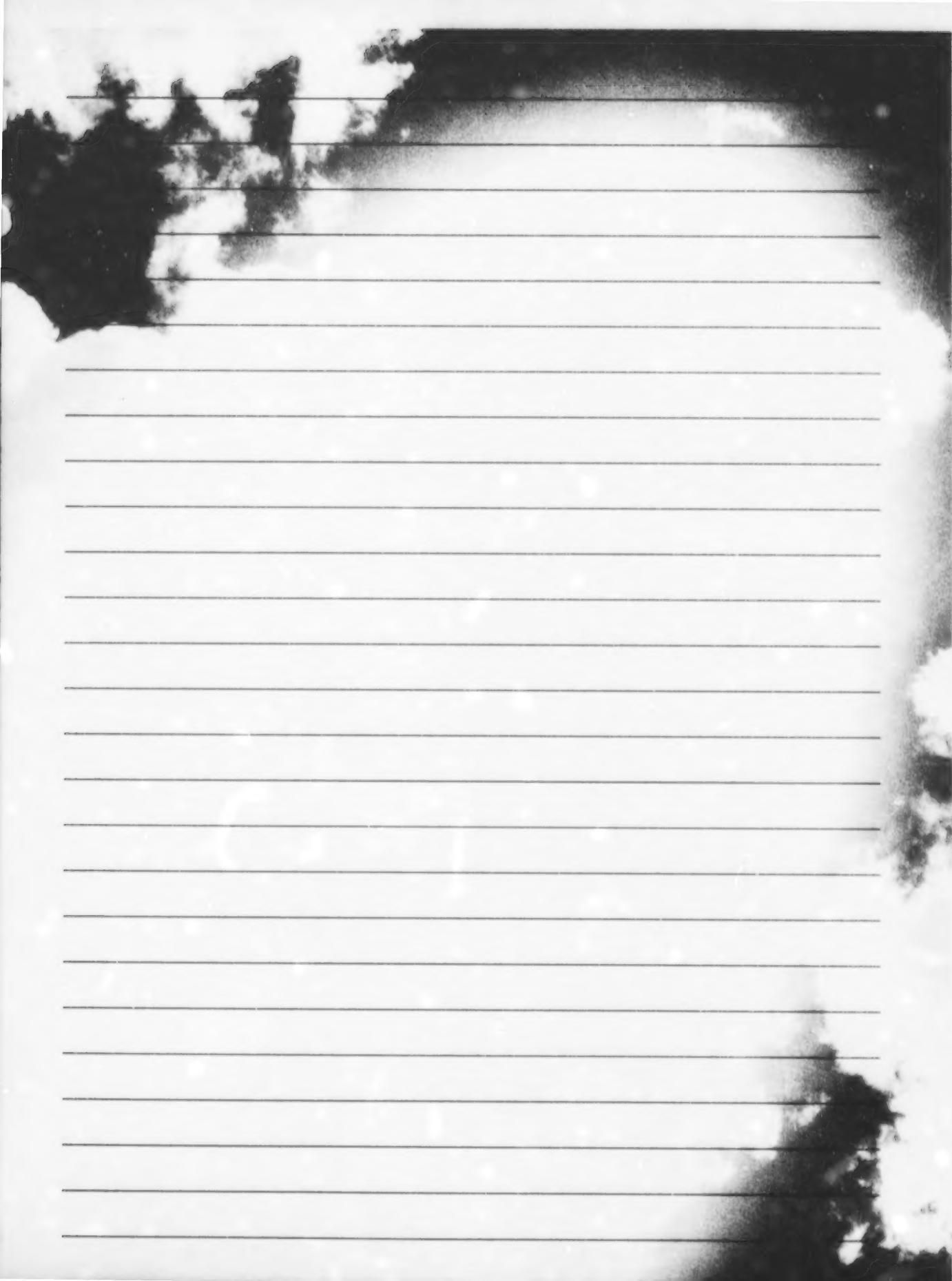
**Dr. E. Ann Clark**

*Associate Professor in  
Plant Agriculture,  
University of Guelph  
Guelph, Ontario*

## Panel: Genetically Modified Organisms: Reality, Perception and Marketing

**D**r. Clark is an Associate Professor in the Plant Agriculture department of the University of Guelph, with specific interests in pasture and grazing management and in the design of ecologically sustainable production systems. She is a widely published author. In addition to her teaching and research responsibilities, she is a frequent guest speaker at scholarly and producer conferences throughout Canada and the northern United States.

Dr. Clark graduated from the University of California, Davis, with a bachelor's degree in biological sciences and a master's degree in agronomy. She also holds a Ph.D in crop production and physiology from Iowa State University.



**Lisa Jategaonkar**

Manager,  
Communications  
and Public Awareness,  
Ag-West Biotech Inc.  
Saskatoon, Saskatchewan

## Panel: Genetically Modified Organisms: Reality, Perception and Marketing

**M**s. Jategaonkar graduated with a master's degree in food microbiology from the University of Saskatchewan's College of Agriculture, where she studied diagnostic methods to detect food pathogens.

She first joined Ag-West Biotech in 1997 to develop the Saskatchewan Agricultural Biotechnology Information Centre (SABIC) program, a demonstration lab which welcomes the public to discuss biotechnology. This program formed the core of Ag-West's information program.

About a year ago, she took over the publication of two of Ag-West's information publications, the AgBiotech Bulletin and the AgBiotech Infosource. She also responds to information inquiries from producers, consumers and the media.



**Angus McAllister**

**Research Director,  
Environics  
International Ltd.  
Toronto, Ontario**

## Panel: Genetically Modified Organisms: Reality, Perception and Marketing

**A**ngus McAllister is Research Director at Environics International, a company specializing in multi-nation survey research and global business strategies. Environics' current clients include global organizations like the United Nations, The World Bank, Shell, Chevron, Suncor, Dow, Dupont, Novartis, Ford, GM, Volkswagen, Volvo, Fiat, Ikea, Procter & Gamble and both the US and Canadian governments, as well as the European Union in Brussels.

Mr. McAllister is responsible for syndicated and custom studies undertaken for clients in the environment, energy, financial, agricultural and health sectors. He regularly briefs industry and government leaders in Canada and the U.S. on emerging trends and issues.

Before joining Environics International, Mr. McAllister worked as project leader and independent consultant on major energy, fisheries and environmental projects in Canada, Indonesia, the Philippines and Japan for clients like the Canadian International Development Agency, the International Development Research Centre, and the United Nations Development Programme.

Mr. McAllister also spent five years with the Ontario provincial government where he provided expert advice on issues management and directed research projects on risk communication and social marketing.

Mr. McAllister studied sociology and statistics at Carleton University in Ottawa, receiving his master's degree in 1989.



**William Hill**

Managing Director  
Merchandising and  
Transportation Services,  
UGG  
Winnipeg, Manitoba

## Panel: Genetically Modified Organisms: Reality, Perception and Marketing

William (Will) Hill is the Managing Director, Merchandising and Transportation Services of United Grain Growers (UGG) and has held this position since April, 1995. In 1990, he joined UGG as Manager, Western Feed Grains in Calgary, Alberta. Prior to joining UGG, he held various merchandising management and grain trading positions with Continental Grain Company Limited and Pioneer Grain Company Limited.

In total, Will has worked in the grain industry for 19 years. Will graduated from the University of Saskatchewan with a Bachelor of Commerce degree in 1980. He is married and has two boys, aged 8 and 12.



**William Hill**

**Managing Director**  
**Merchandising and**  
**Transportation Services,**  
**UGG**  
**Winnipeg, Manitoba**

## Panel: **Genetically Modified Organisms: Reality, Perception and Marketing**

**W**illiam (Will) Hill is the Managing Director, Merchandising and Transportation Services of United Grain Growers (UGG) and has held this position since April, 1995. In 1990, he joined UGG as Manager, Western Feed Grains in Calgary, Alberta. Prior to joining UGG, he held various merchandising management and grain trading positions with Continental Grain Company Limited and Pioneer Grain Company Limited.

In total, Will has worked in the grain industry for 19 years. Will graduated from the University of Saskatchewan with a Bachelor of Commerce degree in 1980. He is married and has two boys, aged 8 and 12.



## Wheat Outlook

### David Boyes

*Market Analyst,  
Latin America  
and the Caribbean,  
CWB*

*Winnipeg, Manitoba*

David has worked at the CWB since 1997, initially as a railway coordinator in Grain Operations Western in the Transportation Division, and since fall 1997 as a market analyst in the CWB's Market Analysis unit. In the latter capacity he is primarily responsible for following and analyzing developments in the grain situation in Latin America and the Caribbean. His work experience prior to joining the CWB includes one year as a university teaching assistant and two years as a legislative assistant for a Member of the House of Commons.

David holds a bachelor's degree in political science from the University of Winnipeg and Carleton University, a master's degree in political science from the University of Western Ontario with a specialization in Canadian public policy and international relations, and a bachelor's degree in agricultural economics from the University of Manitoba. Just prior to joining the CWB he spent several months in Monterrey, Mexico, studying Spanish and completing coursework for his studies in Agricultural Economics. He is fluent in Spanish.



**David Zinger**

Consultant  
David Zinger  
and Associates

Winnipeg, Manitoba

## Luncheon: **Your Humour Outlook: Overlooked or Looking Good?**

**D**avid has customized and delivered over 1000 presentations, courses, and seminars across North America. He has instructed courses in Educational Psychology and Career Education at the University of Manitoba for over 17 years. He provides employee assistance counselling for Seagram and has recently developed a career assistance-coaching program for that organization.

David wrote a humor column for Education Manitoba and provided humor commentaries for CBC Radio. He developed and wrote two Adult Education courses for five Western

Canadian Universities. His Master's of Education thesis was on humor in counselling. David has published over 50 articles and columns.

He is the father of three children, a boy aged 10 and twins aged 8. With his two sons playing hockey and his daughter playing ringette he is now living his life "one rink at a time."





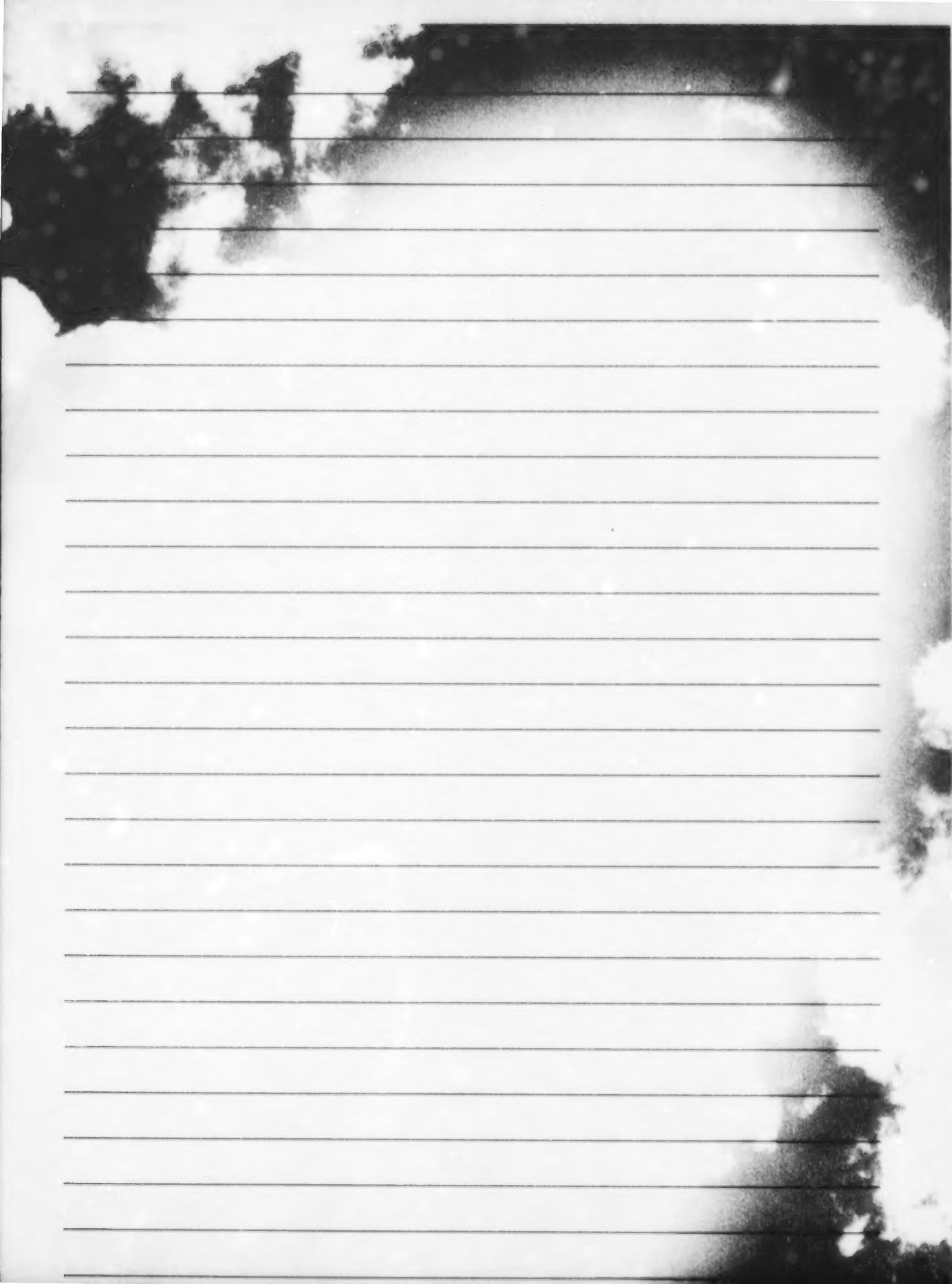
**Ron Gibson**

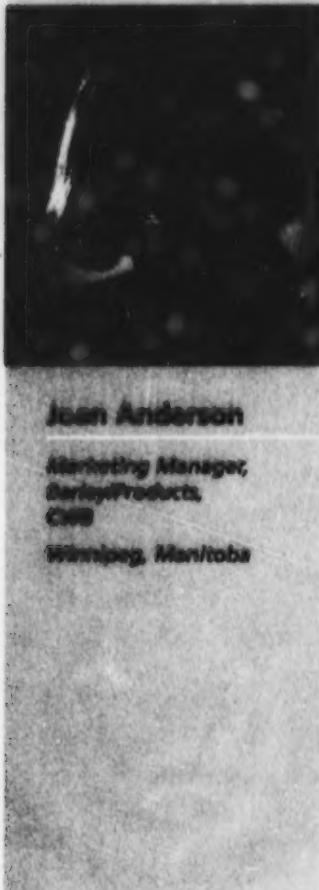
**Senior Vice-President,  
R.J. O'Brien  
and Associates Inc.  
Calgary, Alberta**

## Coarse Grains Outlook

Ron Gibson is Senior Vice President of Chicago-based R. J. O'Brien & Associates, Inc. and in charge of their global agricultural research division. In addition to working with R. J. O'Brien's global clientele in the area of commodity risk management, Ron has been instrumental in the development of a new global food and agri-business equity fund. Ron previously worked for Memphis-based Sparks Companies, Inc., where he worked closely with a number of large international agri-business clients. Prior to that, Mr. Gibson was employed by the Canadian Wheat Board, where he worked in the areas of policy, risk management and transportation.

Ron has traveled to more than 40 countries and worked extensively on the development of cash and futures markets for agricultural products. He holds a Master of Science degree in Agricultural Economics from the University of Manitoba (1990) and a Bachelor of Commerce degree from the University of Saskatchewan (1983).





**Joan Anderson**

Marketing Manager,  
Barley/Products,  
CWB

Winnipeg, Manitoba

## CWB Barley Outlook

**J**oan joined the CWB in the summer of 1999 as Marketing Manager for Barley/Products. She has extensive experience in the Canadian grain industry having worked for ConAgra Grain, Canada and Louis Dreyfus Canada Limited prior to joining the CWB.

Ms. Anderson was born and raised on a farm in Southern Alberta. She attended the University of Alberta and graduated with a Bachelor of Science degree in Agriculture.



**Thomas Mielke**

*Editor-in-Chief  
OIL WORLD  
Hamburg, Germany*

## **Oilseeds Outlook**

**T**homas Mielke studied economics at the University of Hamburg and joined the OIL WORLD team in the mid 1970s. He specialized in statistics as well as commodity analyses and has been a member of the editorial staff of OIL WORLD for more than 20 years. Since 1988 he has been the Editor-in-Chief of all the OIL WORLD publications.

Founded in 1958 as a private and independent organization, OIL WORLD is recognized today as the information provider for the oilseeds, oils/fats and oilmeal industries. Authoritative analysis, statistics and forecasts are provided in the various daily, weekly, quarterly and annual publications as well as on the Internet to producers, consumers, importers, exporters and trade organizations and government agencies worldwide.

Herr Mielke has been invited to give lectures and talks on the global situation in oilseeds, oils and meals in conferences, workshops and meetings at many places all over the world.

Thomas Mielke is also closely watching the developments of the rapidly expanding palm and lauric oil industries, particularly here in South East Asia. Since 1990 he has been a member of the Programme Advisory Committee of the Palm Oil Research Institute of Malaysia.





**Stan Skrypetz**

Special Crops Analyst  
Adaptation and  
Grain Policy Directorate  
Policy Branch  
Agriculture and Agri-Food  
Canada

613-941-6250  
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skrypetz@agri.gc.ca

## Special Crops Outlook

**S**tan Skrypetz is a Special Crops Analyst with the Market Analysis Division of the Adaptation and Grain Policy Directorate, Policy Branch, Agriculture and Agri-Food Canada. His responsibilities include monitoring, analyzing and forecasting the supply, demand and prices for special crops.

Mr. Skrypetz was raised on a farm, received a Diploma in Agriculture and a bachelor's degree in agricultural economics from the University of Manitoba. Prior to joining the Policy Branch in 1998, he worked for 25 years in various capacities in agri-business and agricultural extension.



## Banquet: **Stuart McLean**

**S**tuart McLean hosts CBC Radio's *The Vinyl Café* Sundays at noon (12:30 NT) on CBC Radio One, and Saturdays at 10 a.m. (10:30 a.m. NT) on CBC Radio Two.

Born in Montreal, McLean received a Bachelor of Arts degree from Sir George Williams University (now Concordia University) in 1971.

McLean began his broadcasting career making radio documentaries for CBC Radio's *Sunday Morning*. In 1979, he won an ACTRA award for Best Radio Documentary for his coverage of the *Jonestown* massacre.

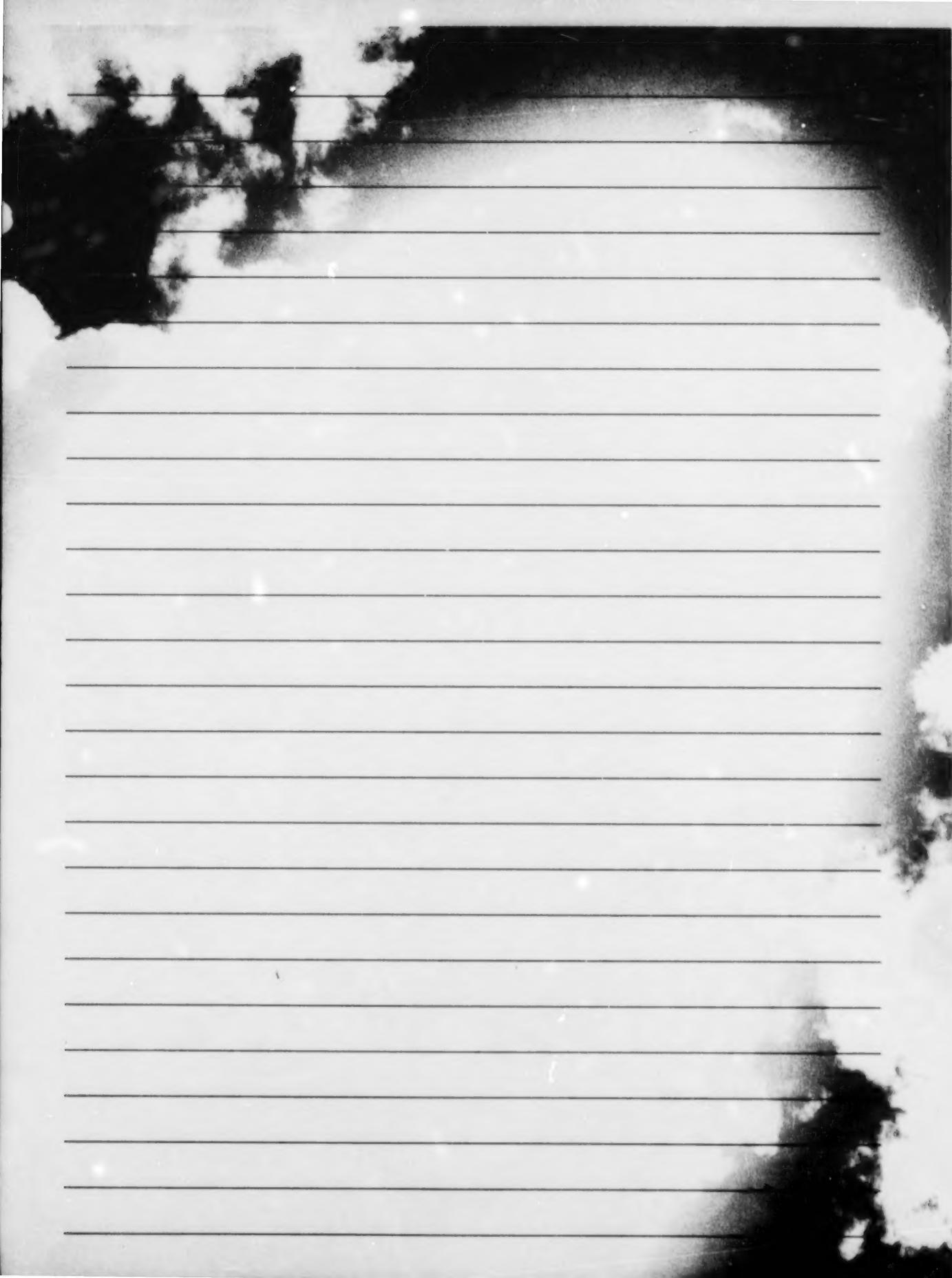
Following *Sunday Morning*, McLean spent seven years as a regular columnist and guest host on *Morningside*. His weekly columns were collected for his first book, *The Morningside World of Stuart McLean*, a Canadian bestseller and a finalist in the 1990 City of Toronto Book Awards.

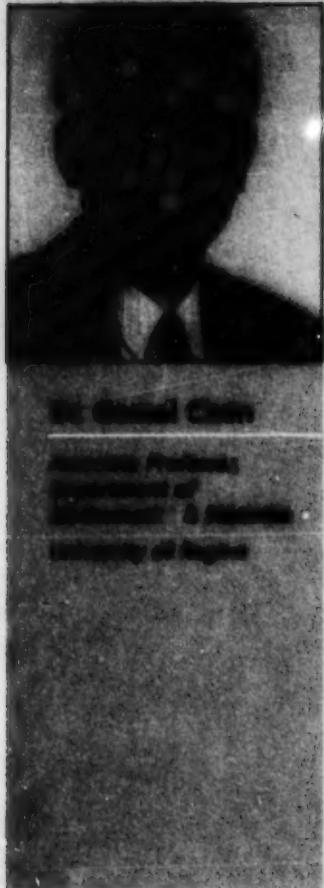
He has also written *Welcome Home: Travels in Small Town Canada*, *Stories from The Vinyl Café* and *When We Were Young*. *Welcome Home* was chosen by the Canadian Authors' Association as the best non-fiction book of 1993.

As well as hosting *The Vinyl Café*, McLean is also a tenured professor at Ryerson Polytechnic University in Toronto and former director of the broadcast division of the School of Journalism.

In 1993, Trent University named McLean the first *Rooke Fellow for Teaching, Writing and Research*.

Since September 1998, McLean has taken *The Vinyl Café* on the road and presented live concerts to 21,000 people in more than 50 Canadian towns and cities. The two *Vinyl Café* recordings - "The Christmas Concert" and "Stories from the Vinyl Café" have been wildly successful. His book *Home From the Vinyl Café* spent 17 consecutive weeks on Canadian bestseller lists and won McLean the Stephen Leacock Award for Humour.

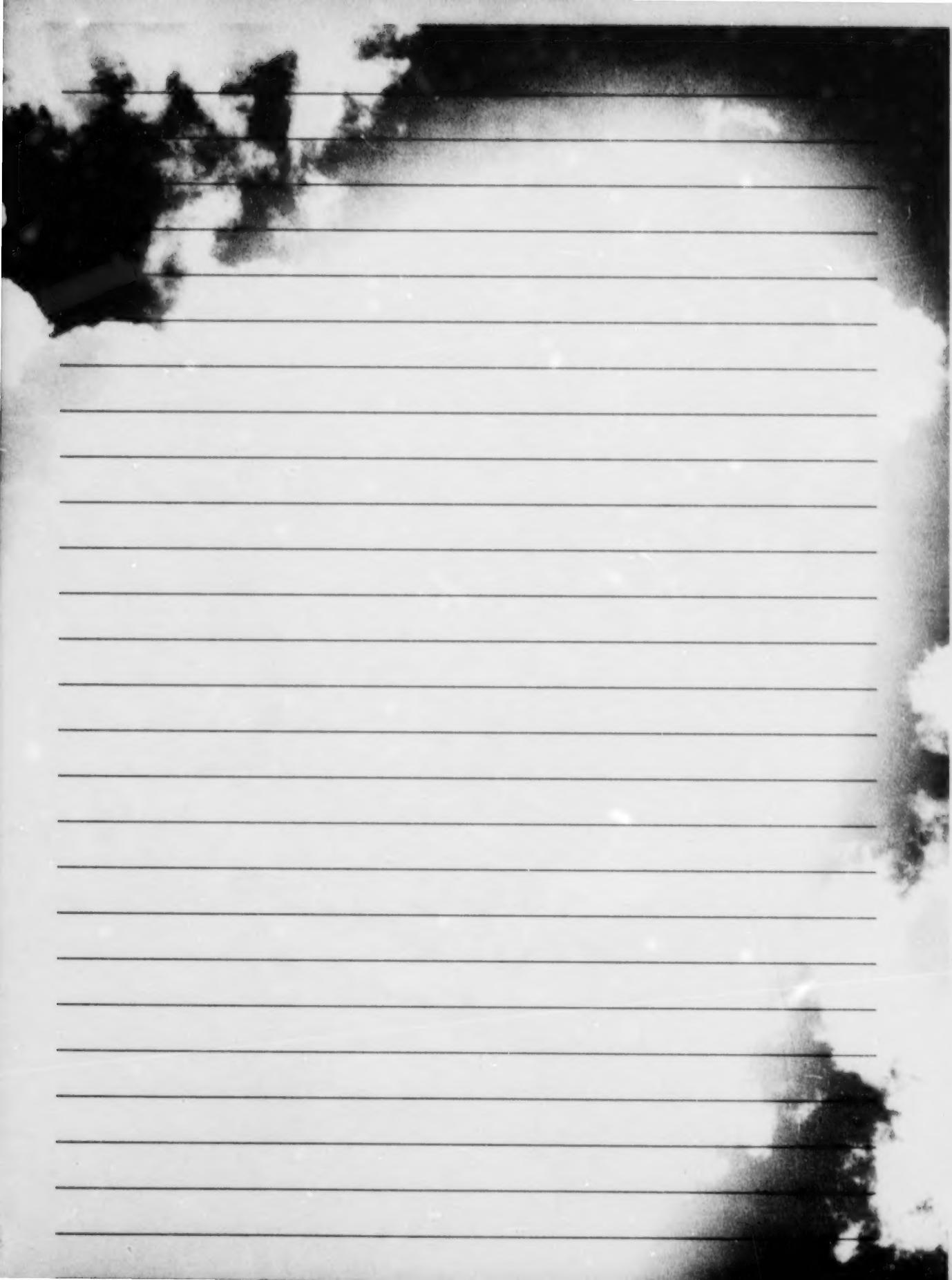


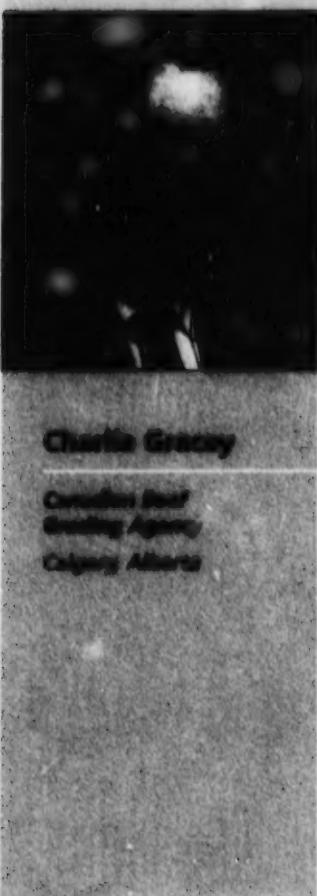


## **Breakfast: 2000 years of Prairie Climate - How reconstruction of the past can help predict future droughts**

**D**r. Gemaï chen has been an Associate Professor in the Mathematics and Statistics Department at the University of Regina since 1997. Prior to this he was a Research Assistant Professor at the University of Waterloo from 1991 to 1994 and Assistant Professor at the University of Regina from 1994 to 1997.

Dr. Chen's field of research includes non-linear time series modelling of environmental changes, parametric and non-parametric regression and survival analysis. He holds a Ph.D in statistics from Simon Fraser University (1991).





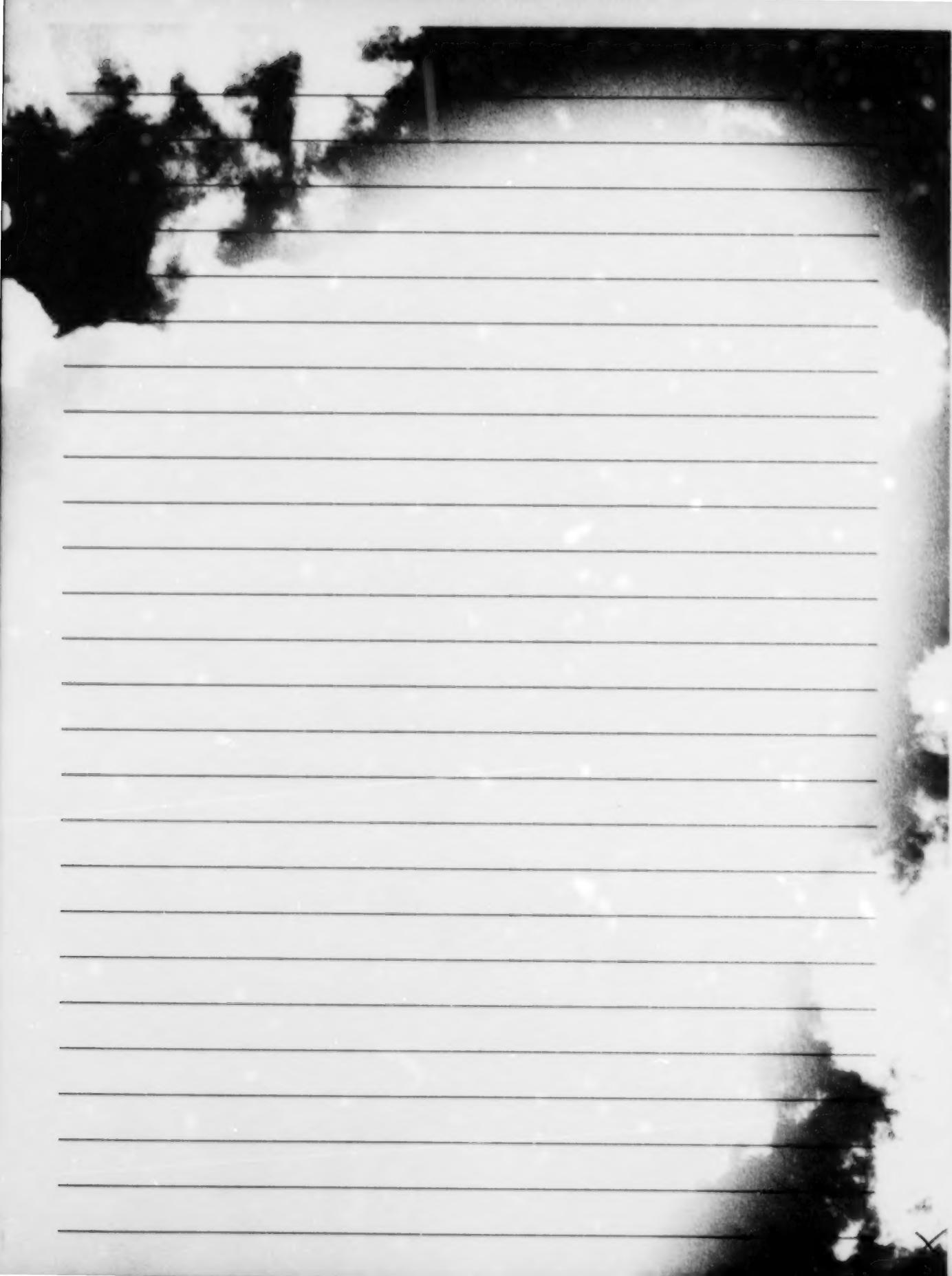
**Charlie Gracey**

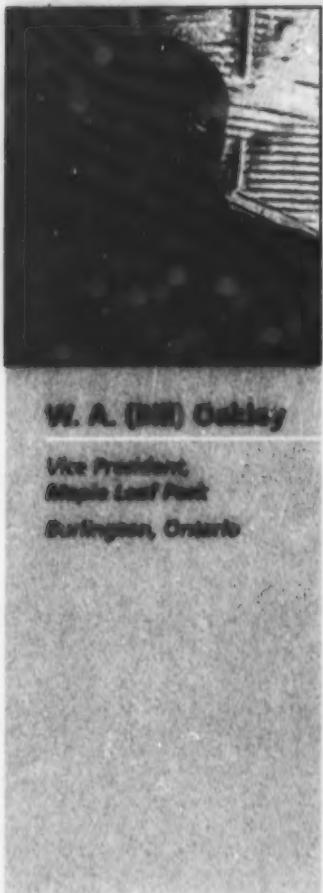
Canadian Beef  
Grading Agency  
Calgary Alberta

## Beef Outlook

**C**harlie Gracey was born and raised on a mixed farm in southern Ontario (dairy, hogs, etc.) and has a degree in Animal Science and a master's degree in animal breeding. Following an instructing career at the Kemptville Agricultural College he became Associate Livestock Commissioner for Ontario in 1965. Also in the same year he acted as the Secretary/Manager of the Ontario Cattlemen's Association (OCA), setting up a check-off system and making the OCA self-supporting. In 1970 he joined the Canadian Cattlemen's Association in the capacity of Manager and later Executive Vice President.

Mr. Gracey was appointed to The Canadian International Trade Tribunal in 1990, where he heard and adjudicated international trade disputes. In 1995 returned to the cattle industry and privatized the Canadian beef grading program. This past November, Mr. Gracey received a recognition award from the Ontario College of Veterinarians for his contributions to the Canadian livestock industry. Mr. Gracey is currently the President of the Canadian Beef Grading Agency and, on a part-time basis, serves as an advisor to the Canadian Cattle Identification Project.



**W. A. (Bill) Oakley**

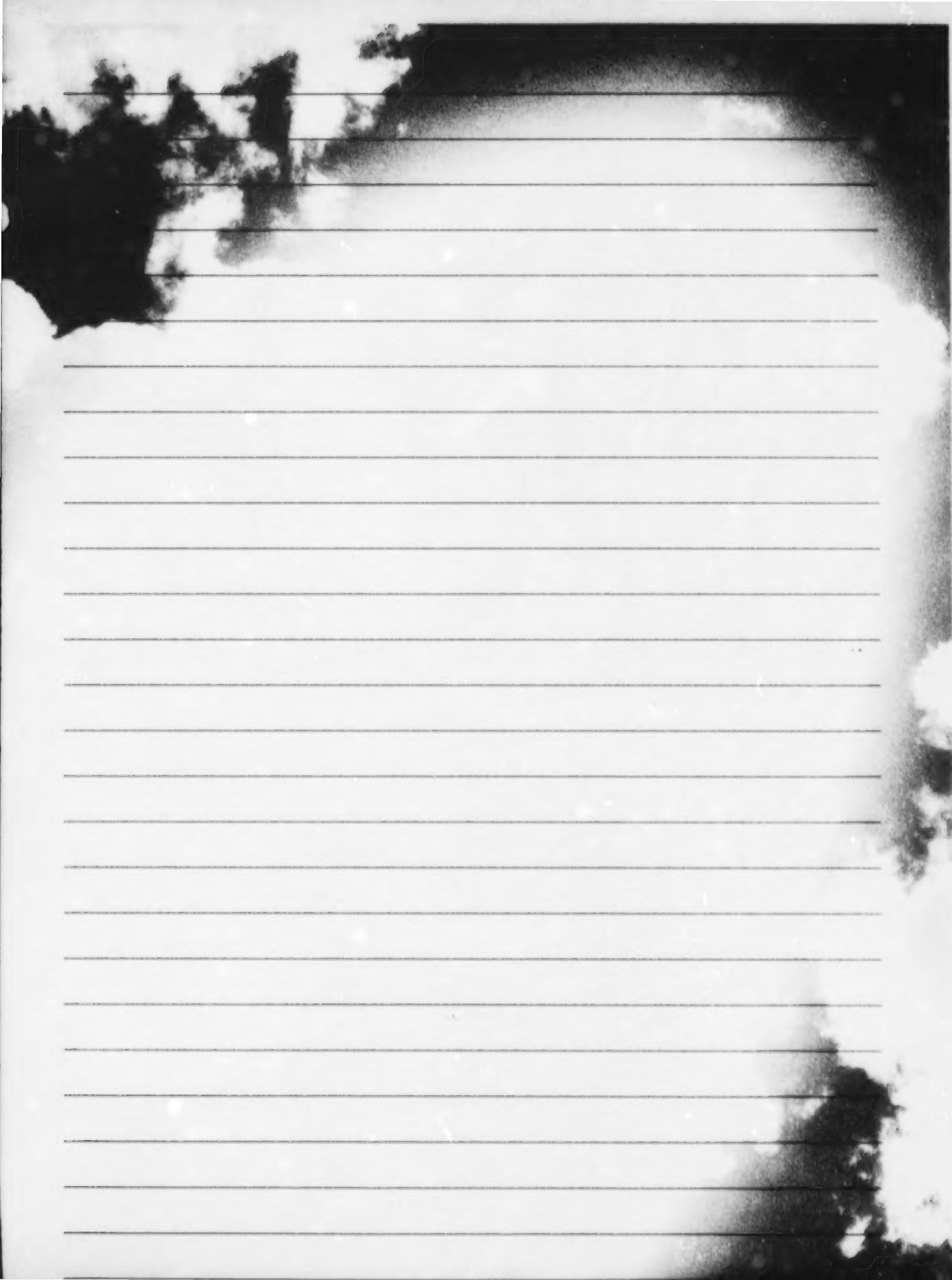
Vice President  
Maple Leaf Pork  
Surfside, Ontario

## Pork Outlook

**M**aple Leaf Pork is Canada's largest hog slaughter and processing company with slaughter facilities located in Lethbridge, Alberta, Brandon, Manitoba and Burlington, Ontario. Approximately 2,500 individuals are employed slaughtering, packaging, and selling an estimated 4.9 million hogs annually in these three single-shift facilities. Engineering to take total slaughter capacity to 9.6 million hogs annually is currently underway.

Mr. Oakley, a native of Western Canada, achieved his graduate degree in agricultural economics from the University of Manitoba.

His current area of responsibility within Maple Leaf Pork includes the procurement and commodity risk management portfolios. Previously, Mr. Oakley was Vice President Agricultural Economics and Risk Management and Corporate Officer of Maple Leaf Foods, Toronto, Ontario.





**The Honourable  
Rosann Wowchuk**

*Member of  
Agriculture and Rural  
MLA for Swan River  
Province of Manitoba*

## Panel: **Western Agriculture: Where to Now?**

**R**osann Wowchuk was born and raised in Cowan, Manitoba. She and her husband Sylvester reside on the family farm and are the parents of three children.

Prior to her successful election in September 1990 as the MLA for the Swan River constituency, Rosann worked as a political organizer for the New Democratic Party. She was re-elected in the 1995 and 1999 general elections.

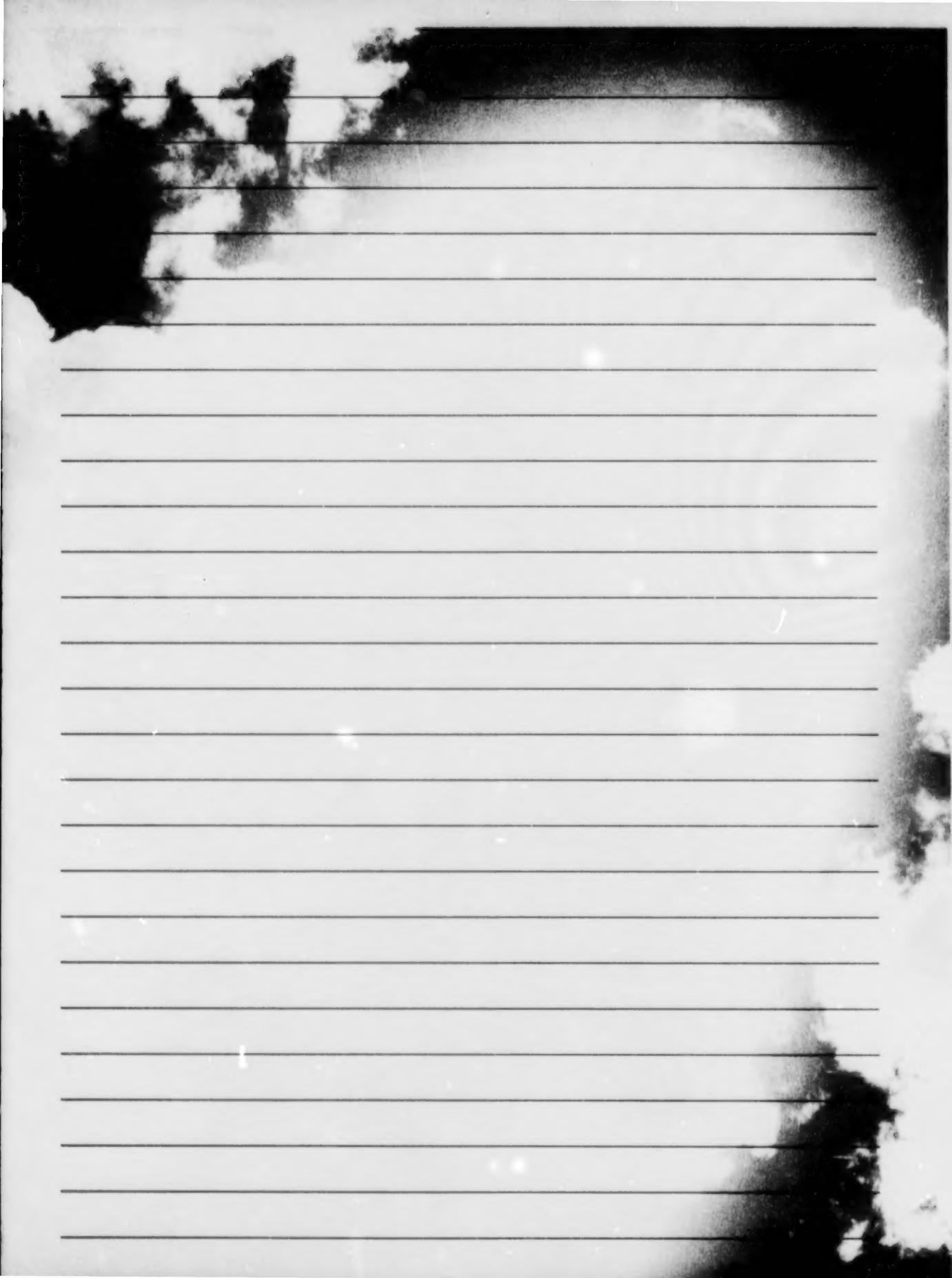
Rosann took her training at the Manitoba Teachers' College and taught at several schools in the area. As well as being a part owner in a mixed farming operation, she started and managed a successful ceramics business for three years.

Rosann has a great deal of experience in serving her community. She served as Councillor and Deputy Reeve of the

LGD of Mountain from 1983-1990. As well, she was a member of the Swan River Hospital and Ambulance Committee, a 4-H leader, secretary of the Cowan Community Centre and a member of various other community groups including the Swan River Rotary Club and is presently Chairperson of the Cowan Homecoming Committee.

Rosann undertook a very active role as Chairperson of the Cowan Soil and Water Co-op. She also served as the Vice-Chair of the North West Soil Management Association.

Rosann was the New Democratic Party Critic for Agriculture, Crop Insurance and the Agriculture Credit Corporation. She was also Deputy Critic for Rural Economic Development.



## Panel: Western Agriculture: Where to Now?

### The Honourable Dwain Lingenfelter

Minister of  
Agriculture and Food

Government  
House Leader

Province of Saskatchewan

**D**wain Lingenfelter has a solid farming background. He was raised on a farm north of Shaunavon and has been an active farmer throughout his working life. He was first elected to the Legislature as MLA for the Shaunavon Constituency in 1978, serving until 1986, and presently represents the Regina Elphinstone Constituency.

Former Premier Allan Blakeney first appointed Dwain to Cabinet in 1980. From 1982 to 1991 he served as Opposition House Leader.

Premier Roy Romanow appointed Dwain to Cabinet as Minister of Economic Development in 1991 where he established regional economic development authorities to promote development throughout the province. He became Deputy

Premier in 1995 and Minister of Crown Investments Corporation in 1997. This portfolio included responsibility for SaskTel, SaskPower, SaskEnergy, SGI and Saskatchewan Transportation Company, as well as the province's public investments.

On September 30, 1999, Dwain became the Minister of Agriculture and Food. In his new post, he is responsible for programs which provide support to Saskatchewan farmers as well as efforts to promote rural economic development.

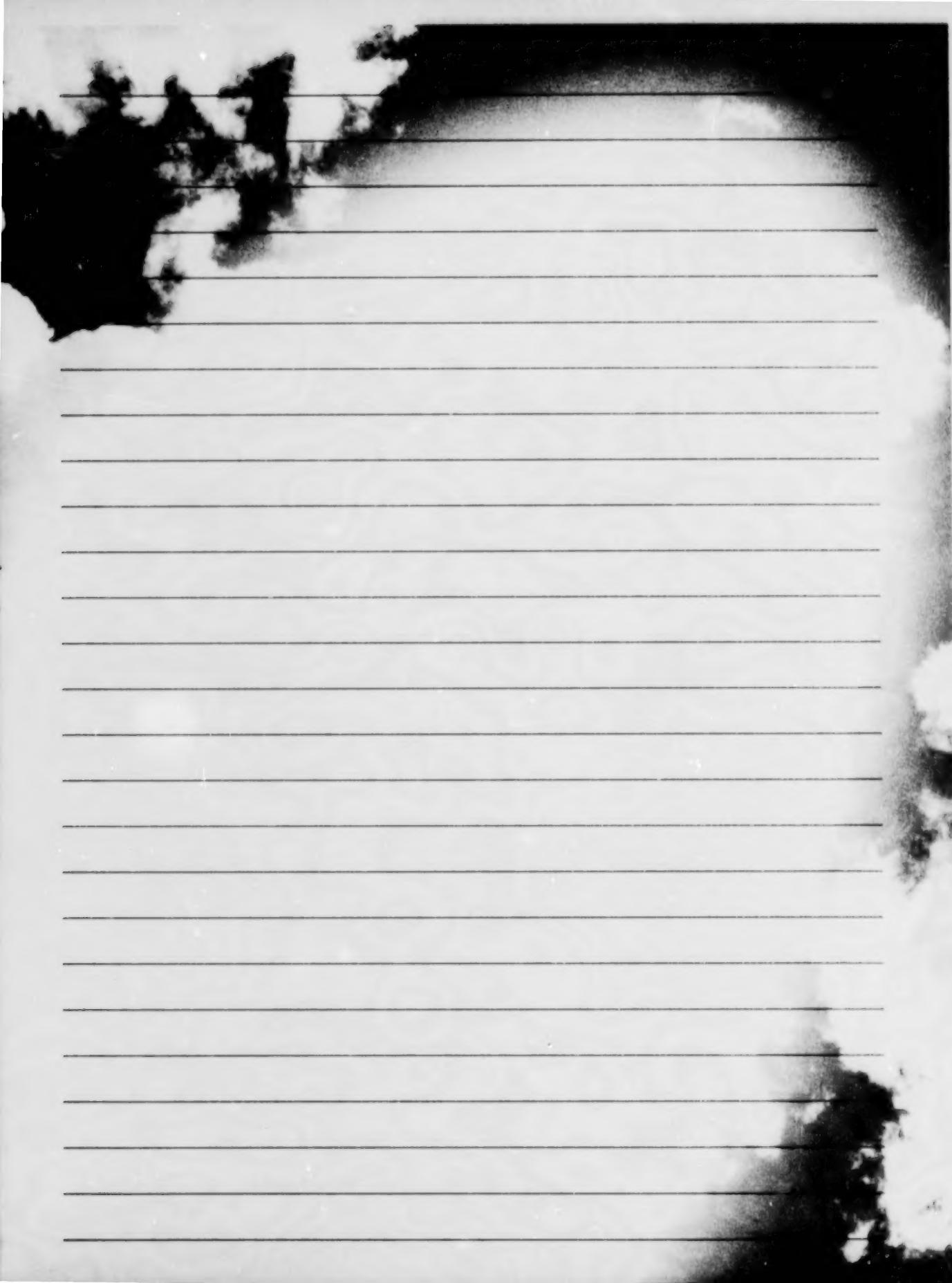
Dwain lives with his family on a farm north of Regina in the Condie area. He produces grains, oilseeds and lentils on 4000 acres in the Shaunavon area including the farm where he grew up. His farming operation has expanded recently to the Regina area.



## Closing Luncheon: Canada's Agricultural Policy?

**B**ob Friesen was elected (by acclamation) President of the Canadian Federation of Agriculture on February 25, 1999 at the CFA annual meeting in Regina, Saskatchewan. Prior to his election, Bob served as CFA's 2nd Vice-President and Chair of the CFA Trade Committee. During the last round of GATT negotiations, Bob was an active proponent of the Canadian agriculture industry, representing producer interests at meetings in Geneva. As the Manitoba Director to the Canadian Turkey Marketing Agency, Bob has had a seat on the CTMA Executive Committee since 1993, serving as chair for four years as well as the representative for poultry on the CFA Executive Committee.

Since 1989, Bob has been a Director of the Manitoba Turkey Producers' Agency, serving as chair for two of those years. Bob operates a turkey and hog farm with his wife, Julie, and brother, Gerry (who is also the chair of Manitoba Pork), in south eastern Manitoba near the town of Wawanesa. Both are actively involved in farm organizations. Bob and Julie have two children, Ajay and Carley.





**Grain**

*a grains and livestock conference*

2000



# Statistical Summary 2000

Winnipeg, Manitoba  
The Lombard Hotel



February 27-29, 2000

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**CANADIAN BULK GRAIN PRODUCTION BY COMMODITY**  
1989 to 1999 (thousand tonnes)

Year	Wheat	Durum	Total Wheat	Barley	Oats	Rye	Corn <sup>1</sup>	Mixed Grain	Soybeans <sup>1</sup>	Flaxseed	Canola	Total Grain and Oilseeds
1989	20 657	4 140	24 796	11 784	3 265	806	6 571	991	1 219	498	3 209	53 139
1990	27 902	4 197	32 098	13 441	2 692	599	7 067	698	1 262	889	3 266	62 013
1991	27 380	4 586	31 946	11 617	1 794	339	7 413	618	1 460	635	4 224	60 045
1992	26 739	3 138	29 877	11 032	2 829	278	4 883	604	1 455	337	3 872	55 167
1993	23 868	3 358	27 226	12 972	3 557	319	6 755	708	1 945	627	5 525	59 634
1994	18 285	4 635	22 920	11 692	3 641	400	7 190	626	2 254	968	7 233	56 921
1995	20 341	4 648	24 989	13 033	2 873	310	7 281	646	2 298	1 105	6 434	58 969
1996	25 175	4 627	29 601	15 562	4 361	309	7 542	582	2 170	851	5 062	66 240
1997	19 929	4 352	24 280	13 527	3 485	320	7 180	603	2 738	1 029	6 393	59 554
1998	18 034	6 042	24 076	12 709	3 958	398	8 952	546	2 737	1 081	7 643	62 102
<b>10-Year Average</b>	<b>22 829</b>	<b>4 372</b>	<b>27 201</b>	<b>12 737</b>	<b>3 245</b>	<b>408</b>	<b>7 083</b>	<b>663</b>	<b>1 954</b>	<b>802</b>	<b>5 286</b>	<b>59 379</b>
1999	22 591	4 259	26 850	13 196	3 641	387	9 096	447	2 766	1 049	8 798	66 231

<sup>1/</sup> Change of crop year starting in 1993 (September to August basis).

Source: Statistics Canada

Feb-2000

**CANADIAN GRAIN EXPORTS BY COMMODITY**  
1989-90 to 1999-2000 (thousand tonnes)

Year	Wheat <sup>1</sup>	Durum	Wheat Flour <sup>2</sup>	Total Wheat and Flour	Barley and Oats and Products	Rye	Corn	Soybeans	Flaxseed	Canola	Grain and Oilseeds
1989-90	14 416	2 838	170	17 425	4 497	710	295	24	193	484	2 038 25 665
1990-91	18 687	3 224	219	22 130	4 823	381	342	124	213	497	1 888 30 398
1991-92	22 064	3 084	231	25 379	3 685	351	226	986	252	458	1 894 33 231
1992-93	17 893	2 260	174	20 328	3 013	776	215	184	211	436	1 876 27 038
1993-94	16 156	2 877	271	19 304	4 218	1 217	154	493	492	605	3 348 29 830
1994-95	16 453	3 996	322	20 771	3 506	1 426	187	359	542	835	3 912 31 538
1995-96	12 806	3 194	199	16 199	2 826	1 223	170	565	599	842	2 804 25 226
1996-97	15 106	4 067	193	19 366	4 005	1 739	154	316	478	679	2 519 29 256
1997-98	15 602	4 205	189	19 995	2 779	1 376	139	118	769	918	2 964 29 057
1998-99	10 676	3 818	230	14 724	1 695	1 491	80	830	868	720	3 900 24 307
<b>10-Year Average</b>	<b>15 986</b>	<b>3 356</b>	<b>220</b>	<b>19 562</b>	<b>3 505</b>	<b>1 069</b>	<b>196</b>	<b>400</b>	<b>462</b>	<b>647</b>	<b>2 714 28 555</b>
1999-2000 <sup>a</sup>	14 800	3 800	n/a	18 600	2 400	1 350	85	700	900	450	4 100 28 585

n/a - not available

1/ Excludes bagged seed wheat.

2/ Flour Expressed in wheat equivalent.

3/ Agriculture and Agri-Food Canada forecast as of February 2000. Corn and Soybean export forecasts for 1999-00 are based on Sept/Aug crop year. Includes exports of products for wheat, oats, barley and rye. Excludes exports of oilseed products.

Sources:

Statistics Canada  
Agriculture and Agri-Food Canada

Feb 2000

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### CANADIAN WHEAT<sup>1</sup> EXPORTS BY SELECTED DESTINATION

Ranked by Volume

1994-95 to 1998-99 (thousand tonnes)

Destination	1994-95		1995-96		1996-97		1997-98		1998-99	
	Exports	Rank								
United States	1 707.4	4	1 091.5	5	1 974.3	2	1 882.0	3	2 227.5	1
Japan	1 457.7	5	1 518.8	2	1 687.1	3	1 449.0	4	1 521.2	2
Algeria	1 906.9	3	1 130.0	3	1 402.5	6	2 313.8	1	1 479.0	3
Indonesia	737.4	8	930.9	6	1 501.9	5	1 058.4	8	721.5	4
Mexico	571.8	9	401.3	10	498.5	11	791.0	7	676.0	5
Venezuela	449.3	11	402.2	9	656.5	9	600.0	11	657.2	6
Iran	1 995.5	2	806.4	7	2 636.2	1	2 138.7	2	554.1	7
Italy	504.8	10	405.4	8	530.1	10	712.2	8	521.5	8
Morocco	11.3	53	251.1	15	267.5	18	368.5	15	403.0	9
Colombia	378.2	12	363.8	12	432.3	12	596.5	12	447.8	10
United Kingdom	190.3	18	204.6	16	273.2	17	297.0	19	416.9	11
Guatemala	55.1	30	51.8	30	187.6	23	269.8	20	387.5	12
Philippines	161.2	21	100.0	21	283.7	16	410.9	14	385.5	13
Peru	125.9	24	123.3	20	384.8	13	636.3	9	341.4	14
Malaysia	164.3	19	57.5	29	245.4	21	317.6	17	300.9	15
Chile	333.8	15	374.0	11	292.3	14	302.1	18	252.3	16
China (PRC)	5 173.2	1	4 787.6	1	1 686.0	4	1 330.8	5	220.7	17
Brazil	930.4	7	1 120.4	4	756.7	8	621.1	10	213.8	18
Ecuador	155.1	22	58.1	28	88.1	31	155.9	26	208.2	19
South Africa	162.5	20	45.5	31	86.1	32	256.8	22	197.2	20
Spain	48.8	34	23.3	39	26.0	43	57.5	37	190.0	21
Sri Lanka	-	-	-	-	166.5	24	51.4	39	157.5	22
Pakistan	361.9	13	5.3	52	69.1	33	213.2	24	150.6	23
United Arab Emirates	0.2	64	0.2	68	62.1	35	353.6	16	137.4	24
West Africa	119.5	25	-	-	-	-	72.9	35	136.9	25
Bangladesh	128.1	23	140.7	19	188.5	22	101.8	29	136.1	26
Nigeria	-	-	-	-	148.5	26	211.8	25	127.2	27
Korea, South	1 047.8	6	289.0	14	806.4	7	473.9	13	114.3	28
Sudan	-	-	-	-	-	-	99.6	30	105.1	29
Thailand	104.0	26	186.7	17	155.2	25	98.5	31	104.1	30
Belgium/Luxembourg	360.6	14	292.6	13	248.8	20	262.2	21	91.6	31
Greece	0.9	76	1.1	60	11.2	54	35.3	46	90.6	32
Netherlands	18.9	47	75.5	25	5.6	61	33.8	48	77.5	33
Ghana	27.7	41	13.0	42	96.6	30	95.5	32	75.5	34
Cuba	2.8	77	70.3	26	35.3	42	108.8	28	70.0	35
New Zealand	32.2	43	44.3	32	50.8	36	78.0	34	58.4	36
Turkey	3.9	97	88.0	23	98.2	29	215.7	23	56.0	37
Togo	-	-	-	-	2.2	65	22.7	53	54.5	38
Puerto Rico	-	-	7.7	49	37.5	40	84.3	33	46.2	39
Norway	49.4	33	12.4	43	44.2	38	19.8	55	45.7	40
Switzerland	7.4	60	36.8	35	6.0	60	39.4	42	37.3	41
Lebanon	7.3	61	0.3	64	25.7	44	0.5	81	36.3	42
Taiwan	42.7	36	99.8	22	35.7	41	-	137	35.7	43
Poland	27.3	42	37.5	34	65.6	34	39.1	43	30.4	44
Germany	T	87	T	81	T	86	-	118	28.5	45
Tunisia	191.8	17	85.0	24	142.8	27	24.9	50	27.5	48
Ethiopia	50.5	32	31.3	36	-	-	54.4	38	25.5	47
Mozambique	34.3	38	21.7	40	15.4	48	23.5	52	23.6	48
Cyprus	-	-	-	-	6.3	59	18.0	56	23.1	49
Cameroon	18.6	48	-	-	-	-	20.6	54	21.4	50
Others	913.3	-	412.2	-	945.2	-	575.9	-	195.8	-
<b>Total (and number of markets)</b>	<b>20 771.4</b>	<b>(94)</b>	<b>16 198.6</b>	<b>(83)</b>	<b>19 366.0</b>	<b>(86)</b>	<b>19 995.1</b>	<b>(97)</b>	<b>14 723.5</b>	<b>(94)</b>

T - less than 50 tonnes

1/ Includes Durum and Wheat Flour.

Sources:

Canadian Grain Commission - Canadian Grain Exports

Statistics Canada

Feb-2000



### CANADIAN WHEAT<sup>1</sup> EXPORTS BY SELECTED DESTINATION

Ranked by Volume

1994-95 to 1998-99 (thousand tonnes)

Destination	1994-95		1995-96		1996-97		1997-98		1998-99	
	Exports	Rank								
United States	1 707.4	4	1 091.5	5	1 974.3	2	1 882.0	3	2 227.5	1
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Algeria	1 906.9	3	1 130.0	3	1 402.5	6	2 313.8	1	1 479.0	3
Indonesia	737.4	8	930.9	6	1 501.9	5	1 058.4	6	721.5	4
Mexico	571.8	9	401.3	10	498.5	11	791.0	7	676.0	5
Venezuela	449.3	11	402.2	9	656.5	9	600.0	11	657.2	6
Iran	1 995.5	2	806.4	7	2 636.2	1	2 138.7	2	554.1	7
Italy	504.6	10	405.4	8	530.1	10	712.2	8	521.5	8
Morocco	11.3	53	251.1	15	267.5	18	368.5	15	483.0	9
Colombia	378.2	12	363.8	12	432.3	12	596.5	12	447.8	10
United Kingdom	190.3	18	204.6	16	273.2	17	297.0	19	416.9	11
Guatemala	55.1	30	51.8	30	187.6	23	269.8	20	387.5	12
Philippines	161.2	21	100.0	21	283.7	16	410.9	14	385.5	13
Peru	125.9	24	123.3	20	384.8	13	636.3	9	341.4	14
Malaysia	164.3	19	57.5	29	245.4	21	317.6	17	300.9	15
Chile	333.8	15	374.0	11	292.3	14	302.1	18	252.3	16
China (PRC)	5 173.2	1	4 787.6	1	1 686.0	4	1 330.8	5	220.7	17
Brazil	930.4	7	1 120.4	4	756.7	8	621.1	10	213.8	18
Ecuador	155.1	22	58.1	28	88.1	31	155.9	26	208.2	19
South Africa	162.5	20	45.5	31	86.1	32	256.8	22	197.2	20
Spain	48.8	34	23.3	39	26.0	43	57.5	37	190.0	21
Sri Lanka	-	-	-	-	166.5	24	51.4	39	157.5	22
Pakistan	361.9	13	5.3	52	69.1	33	213.2	24	150.6	23
United Arab Emirates	0.2	84	0.2	68	62.1	35	353.6	16	137.4	24
West Africa	119.5	25	-	-	-	-	72.9	35	136.9	25
Bangladesh	128.1	23	140.7	19	188.5	22	101.8	29	136.1	26
Nigeria	-	-	-	-	148.5	26	211.8	25	127.2	27
Korea, South	1 047.8	6	289.0	14	806.4	7	473.9	13	114.3	28
Sudan	-	-	-	-	-	-	99.6	30	105.1	29
Thailand	104.0	26	186.7	17	155.2	25	98.5	31	104.1	30
Belgium/Luxembourg	360.6	14	292.6	13	248.6	20	262.2	21	91.6	31
Greece	0.9	76	1.1	60	11.2	54	35.3	46	90.6	32
Netherlands	18.9	47	75.5	25	5.6	61	33.8	48	77.5	33
Ghana	27.7	41	13.0	42	98.6	30	95.5	32	75.5	34
Cuba	2.8	71	70.3	26	35.3	42	108.8	28	70.0	35
New Zealand	32.2	40	44.3	32	50.8	36	78.0	34	58.4	36
Turkey	3.9	67	88.0	23	98.2	29	215.7	23	56.0	37
Togo	-	-	-	-	2.2	65	22.7	53	54.5	38
Puerto Rico	-	-	7.7	49	37.5	40	84.3	33	46.2	39
Norway	49.4	33	12.4	43	44.2	38	19.8	55	45.7	40
Switzerland	7.4	60	36.8	35	6.0	60	39.4	42	37.3	41
Lebanon	7.3	61	0.3	64	25.7	44	0.5	81	36.3	42
Taiwan	42.7	36	99.6	22	35.7	41	-	137	35.7	43
Poland	27.3	42	37.5	34	65.6	34	39.1	43	30.4	44
Germany	T	87	T	81	T	86	-	118	28.5	45
Tunisia	191.8	17	85.0	24	142.8	27	24.9	50	27.5	46
Ethiopia	50.5	32	31.3	36	-	-	54.4	38	25.5	47
Mozambique	34.3	38	21.7	40	15.4	48	23.5	52	23.6	48
Cyprus	-	-	-	-	6.3	59	18.0	56	23.1	49
Cameroon	18.6	48	-	-	-	-	20.6	54	21.4	50
Others	913.3	-	412.2	-	945.2	-	575.9	-	195.8	-
<b>Total (and number of markets)</b>	<b>20 771.4</b>	<b>(94)</b>	<b>16 198.6</b>	<b>(83)</b>	<b>19 366.0</b>	<b>(86)</b>	<b>19 995.1</b>	<b>(97)</b>	<b>14 723.5</b>	<b>(94)</b>

T - less than 50 tonnes

1/ Includes Durum and Wheat Flour.

## CANADIAN DURUM<sup>1</sup> EXPORTS BY SELECTED DESTINATION

Ranked by Volume

1994-95 to 1998-99 (thousand tonnes)

Destination	1994-95		1995-96		1996-97		1997-98		1998-99	
	Exports	Rank								
Algeria	1 892.6	1	1 127.7	1	1 223.1	1	1 948.2	1	1 479.0	1
United States	292.9	4	182.4	6	361.4	3	427.8	2	658.2	2
Morocco	-	-	222.9	4	240.0	6	301.7	4	337.6	3
Italy	339.0	2	269.2	3	271.2	5	373.6	3	273.3	4
Venezuela	232.2	5	207.2	5	295.2	4	200.2	6	247.7	5
Japan	122.0	8	154.5	7	203.4	8	184.2	7	203.9	6
Chile	97.8	9	100.0	8	59.0	12	97.3	10	150.2	7
Peru	75.8	10	73.0	12	144.6	10	149.9	8	131.5	8
Belgium/Luxembourg	315.1	3	277.0	2	205.0	7	217.3	5	44.3	9
Poland	27.3	12	37.5	14	18.8	14	39.1	11	30.4	10
Iran	-	-	-	-	608.0	2	-	-	29.0	11
Germany	-	-	-	-	-	-	-	-	28.5	12
Netherlands	18.7	16	69.0	13	5.5	24	28.5	12	28.5	13
Guatemala	11.4	20	12.2	22	16.9	16	14.7	15	27.6	14
Tunisia	191.8	7	85.0	11	68.1	11	24.9	13	27.5	15
Switzerland	5.3	22	32.0	16	3.8	29	19.6	14	24.1	16
Spain	48.7	11	18.8	18	-	-	-	-	18.2	17
United Arab Emirates	-	-	-	-	-	-	-	-	16.3	18
Norway	13.2	17	12.4	21	18.1	15	13.2	17	12.7	19
Brazil	4.0	23	10.8	23	5.3	27	14.7	16	10.1	20
Cyprus	-	-	-	-	6.3	23	5.4	20	8.4	21
Dominican Republic	-	-	-	-	-	-	-	-	7.7	22
Bolivia	-	-	-	-	-	-	-	-	5.4	23
Finland	21.0	15	14.4	19	16.2	17	7.5	19	5.1	24
Colombia	-	-	-	-	4.0	28	-	-	4.7	25
El Salvador	-	-	-	-	3.0	30	-	-	4.5	26
Indonesia	11.8	18	32.2	15	22.0	13	11.0	18	3.0	27
Argentina	26.3	13	-	-	-	-	-	-	-	-
Costa Rica	2.7	25	-	-	9.2	20	-	-	-	-
Cuba	-	-	8.5	24	5.5	26	5.0	21	-	-
Ecuador	-	-	6.1	25	5.5	25	3.8	22	-	-
Eritrea	-	-	5.2	27	-	-	-	-	-	-
Ethiopia	24.0	14	31.3	17	-	-	-	-	-	-
Hong Kong	-	-	0.7	28	-	-	-	-	-	-
Israel	-	-	-	-	15.3	18	-	-	-	-
Kuwait	3.3	24	-	-	8.0	21	-	-	-	-
Libya	200.7	6	97.1	9	202.7	9	117.4	9	-	-
Mexico	-	-	5.5	26	6.8	22	-	-	-	-
South Africa	11.6	19	13.2	20	-	-	-	-	-	-
Turkey	-	-	88.0	10	15.2	19	-	-	-	-
United Kingdom	7.2	21	-	-	-	-	-	-	-	-
<b>Total (and number of markets)</b>	<b>3 996.3</b>	<b>( 25)</b>	<b>3 193.6</b>	<b>( 28)</b>	<b>4 067.0</b>	<b>( 30)</b>	<b>4 205.0</b>	<b>( 22)</b>	<b>3 817.5</b>	<b>( 27)</b>

1/ Excludes durum flour

## CANADIAN BARLEY<sup>1</sup> EXPORTS BY SELECTED DESTINATION

Ranked by Volume  
1994-95 to 1998-99 (thousand tonnes)

Destination	1994-95 Exports	Rank	1995-96 Exports	Rank	1996-97 Exports	Rank	1997-98 Exports	Rank	1998-99 Exports	Rank
United States	1 254.5	1	785.3	1	915.2	2	685.4	1	564.3	1
China	383.7	3	379.4	3	508.6	4	561.7	2	291.3	2
Japan	967.7	2	395.2	2	575.2	3	254.1	4	183.2	3
Mexico	-	-	57.2	6	3.2	13	54.2	6	62.0	4
Saudi Arabia	129.5	4	370.1	4	1 090.0	1	387.1	3	-	-
Iran	-	-	52.5	8	157.5	5	105.8	5	-	-
United Arab Emirates	-	-	-	-	-	-	30.5	7	-	-
Korea, South	34.6	6	19.8	11	51.0	6	18.7	8	-	-
Tunisia	-	-	-	-	-	-	14.6	9	-	-
Chile	-	-	5.0	13	-	-	7.8	10	-	-
Argentina	-	-	-	-	36.8	7	6.0	11	-	-
Australia	25.0	9	18.0	12	-	-	-	-	-	-
Brazil	30.0	7	55.7	7	-	-	-	-	-	-
Colombia	88.1	5	145.8	5	20.0	10	-	-	-	-
Ecuador	9.5	13	27.8	9	6.0	12	-	-	-	-
Guatemala	5.8	16	-	-	-	-	-	-	-	-
Israel	11.9	11	-	-	33.8	8	-	-	-	-
Kuwait	-	-	-	-	16.0	11	-	-	-	-
Libya	-	-	24.3	10	25.5	9	-	-	-	-
Netherlands	6.0	15	-	-	-	-	-	-	-	-
New Zealand	25.2	8	-	-	-	-	-	-	-	-
Poland	10.3	12	-	-	-	-	-	-	-	-
South Africa	19.9	10	-	-	-	-	-	-	-	-
Taiwan	7.9	14	-	-	-	-	-	-	-	-
Uruguay	-	-	-	-	2.4	14	-	-	-	-
<b>Total (and number of markets)</b>	<b>3 009.4</b>	<b>( 16)</b>	<b>2 335.9</b>	<b>( 13)</b>	<b>3 441.1</b>	<b>( 14)</b>	<b>2 125.9</b>	<b>( 11)</b>	<b>1 100.7</b>	<b>( 4)</b>

1/ Excludes malt

Source: Canadian Grain Commission - Canadian Grain Exports

Feb-2000

## CANADIAN DURUM<sup>1</sup> EXPORTS BY SELECTED DESTINATION

Ranked by Volume

1994-95 to 1998-99 (thousand tonnes)

Destination	1994-95		1995-96		1996-97		1997-98		1998-99	
	Exports	Rank								
Algeria	1 892.6	1	1 127.7	1	1 223.1	1	1 948.2	1	1 479.0	1
United States	292.9	4	182.4	6	361.4	3	427.8	2	658.2	2
Morocco	-	-	222.9	4	240.0	6	301.7	4	337.6	3
Italy	339.0	2	269.2	3	271.2	5	373.6	3	273.3	4
Venezuela	232.2	5	207.2	5	295.2	4	200.2	6	247.7	5
Japan	122.0	8	154.5	7	203.4	8	184.2	7	203.9	6
Chile	97.8	9	100.0	8	59.0	12	97.3	10	150.2	7
Peru	75.8	10	73.0	12	144.6	10	149.9	8	131.5	9
Belgium/Luxembourg	315.1	3	277.0	2	205.0	7	217.3	5	44.3	9
Poland	27.3	12	37.5	14	18.8	14	39.1	11	30.4	10
Iran	-	-	-	-	608.0	2	-	-	29.0	11
Germany	-	-	-	-	-	-	-	-	28.5	12
Netherlands	18.7	16	69.0	13	5.5	24	28.5	12	28.5	13
Guatemala	11.4	20	12.2	22	16.9	16	14.7	15	27.6	14
Tunisia	191.8	7	85.0	11	68.1	11	24.9	13	27.5	15
Switzerland	5.3	22	32.0	16	3.8	29	19.6	14	24.1	18
Spain	48.7	11	18.8	18	-	-	-	-	18.2	17
United Arab Emirates	-	-	-	-	-	-	-	-	16.3	18
Norway	13.2	17	12.4	21	18.1	15	13.2	17	12.7	19
Brazil	4.0	23	10.8	23	5.3	27	14.7	16	10.1	20
Cyprus	-	-	-	-	6.3	23	5.4	20	8.4	21
Dominican Republic	-	-	-	-	-	-	-	-	7.7	22
Bolivia	-	-	-	-	-	-	-	-	5.4	23
Finland	21.0	15	14.4	19	16.2	17	7.5	19	5.1	24
Colombia	-	-	-	-	4.0	26	-	-	4.7	25
El Salvador	-	-	-	-	3.0	30	-	-	4.5	26
Indonesia	11.8	18	32.2	15	22.0	13	11.0	18	3.0	27
Argentina	26.3	13	-	-	-	-	-	-	-	-
Costa Rica	2.7	25	-	-	9.2	20	-	-	-	-
Cuba	-	-	8.5	24	5.5	26	5.0	21	-	-
Ecuador	-	-	6.1	25	5.5	25	3.8	22	-	-
Eritrea	-	-	5.2	27	-	-	-	-	-	-
Ethiopia	24.0	14	31.3	17	-	-	-	-	-	-
Hong Kong	-	-	0.7	28	-	-	-	-	-	-
Israel	-	-	-	-	15.3	18	-	-	-	-
Kuwait	3.3	24	-	-	8.0	21	-	-	-	-
Libya	200.7	6	97.1	9	202.7	9	117.4	9	-	-
Mexico	-	-	5.5	26	6.8	22	-	-	-	-
South Africa	11.6	19	13.2	20	-	-	-	-	-	-
Turkey	-	-	88.0	10	15.2	19	-	-	-	-
United Kingdom	7.2	21	-	-	-	-	-	-	-	-
<b>Total (and number of markets)</b>	<b>3 996.3</b>	<b>(25)</b>	<b>3 193.6</b>	<b>(28)</b>	<b>4 067.0</b>	<b>(30)</b>	<b>4 205.0</b>	<b>(22)</b>	<b>3 817.5</b>	<b>(27)</b>

1/ Excludes durum flour

## CANADIAN BARLEY<sup>1</sup> EXPORTS BY SELECTED DESTINATION

Ranked by Volume

1994-95 to 1998-99 (thousand tonnes)

Destination	1994-95 Exports	Rank	1995-96 Exports	Rank	1996-97 Exports	Rank	1997-98 Exports	Rank	1998-99 Exports	Rank
United States	1 254.5	1	785.3	1	915.2	2	685.4	1	564.3	1
China	383.7	3	379.4	3	508.6	4	561.7	2	291.3	2
Japan	967.7	2	395.2	2	575.2	3	254.1	4	183.2	3
Mexico	-	-	57.2	6	3.2	13	54.2	6	62.0	4
Saudi Arabia	129.5	4	370.1	4	1 090.0	1	387.1	3	-	-
Iran	-	-	52.5	8	157.5	5	105.8	5	-	-
United Arab Emirates	-	-	-	-	-	-	30.5	7	-	-
Korea, South	34.6	6	19.8	11	51.0	6	18.7	8	-	-
Tunisia	-	-	-	-	-	-	14.6	9	-	-
Chile	-	-	5.0	13	-	-	7.8	10	-	-
Argentina	-	-	-	-	36.8	7	6.0	11	-	-
Australia	25.0	9	18.0	12	-	-	-	-	-	-
Brazil	30.0	7	55.7	7	-	-	-	-	-	-
Colombia	88.1	5	145.6	5	20.0	10	-	-	-	-
Ecuador	9.5	13	27.8	9	6.0	12	-	-	-	-
Guatemala	5.8	16	-	-	-	-	-	-	-	-
Israel	11.9	11	-	-	33.8	8	-	-	-	-
Kuwait	-	-	-	-	16.0	11	-	-	-	-
Libya	-	-	24.3	10	25.5	9	-	-	-	-
Netherlands	6.0	15	-	-	-	-	-	-	-	-
New Zealand	25.2	8	-	-	-	-	-	-	-	-
Poland	10.3	12	-	-	-	-	-	-	-	-
South Africa	19.9	10	-	-	-	-	-	-	-	-
Taiwan	7.9	14	-	-	-	-	-	-	-	-
Uruguay	-	-	-	-	2.4	14	-	-	-	-
<b>Total (and number of markets)</b>	<b>3 009.4</b>	<b>( 16)</b>	<b>2 335.9</b>	<b>( 13)</b>	<b>3 441.1</b>	<b>( 14)</b>	<b>2 125.9</b>	<b>( 11)</b>	<b>1 100.7</b>	<b>( 4)</b>

<sup>1</sup>/ Excludes malt

Source: Canadian Grain Commission - Canadian Grain Exports

Feb-2000

**CANADA: SUPPLY AND DISPOSITION FOR GRAINS AND OILSEEDS**      **FEBRUARY 17, 2000**

Grain and Crop Year (a)	Harvested Area 000 ha	Yield t/ha	Production	Imports (b)	Total Supply	Exports (c)	Food and Ind. Use	Feed, Waste & Dockage	Total Domestic Use (d)	Ending Stocks	Average Price (e) \$/t
Durum											
8-1999	2,914	2.07	6,042	3	6,802	3,848	182	650	1,001	1,952	201
9-2000f	1,780	2.42	4,259	10	6,221	3,800	180	611	1,021	1,400	190-220*
0-2001f	2,405	2.23	5,370	1	6,771	3,800	185	656	1,071	1,900	165-195
<b>Total Except Durum</b>											
8-1999	7,764	2.32	18,034	77	23,363	10,783	2,691	3,549	7,078	5,413	184
9-2000f	8,603	2.63	22,591	15	28,019	14,800	2,675	3,679	7,219	6,000	157-177*
0-2001f	8,770	2.37	20,770	25	28,795	14,100	2,700	3,605	7,195	5,500	155-185
<b>Wheat</b>											
8-1999	10,678	2.25	24,076	80	30,165	14,631	2,873	4,199	8,079	7,365	
9-2000f	10,364	2.59	26,850	25	34,240	18,600	2,855	4,290	8,240	7,400	
0-2001f	11,175	2.34	26,140	26	33,566	17,900	2,885	4,261	8,266	7,400	
<b>Barley</b>											
8-1999	4,272	2.98	12,709	62	15,230	1,695	375	10,088	10,848	2,687	117
9-2000f	4,069	3.24	13,196	25	15,908	2,400	385	9,918	10,708	2,800	100-120
0-2001f	4,275	3.15	13,480	25	16,305	2,500	385	10,015	10,805	3,000	95-125
<b>Oats</b>											
8-1999	1,118	8.01	8,952	893	10,737	830	1,845	7,147	9,023	885	110
9-2000f	1,141	7.97	9,096	1,000	10,981	700	2,000	7,276	9,306	975	95-115
0-2001f	1,135	7.34	8,330	1,100	10,405	300	2,000	7,275	9,305	800	90-120
<b>Barley, Oats and Rye</b>											
8-1999	1,592	2.49	3,958	3	4,807	1,491	226	1,833	2,224	1,092	132
9-2000f	1,398	2.60	3,641	3	4,736	1,350	220	1,906	2,286	1,100	110-130
0-2001f	1,399	2.55	3,573	3	4,676	1,400	225	1,891	2,276	1,000	105-135
<b>Barley, Oats, Rye and Wheat</b>											
8-1999	204	1.96	398	0	462	80	57	140	217	164	
9-2000f	169	2.29	387	0	551	85	58	200	276	190	
0-2001f	139	2.18	302	0	492	80	60	162	242	170	
<b>Other Grains</b>											
8-1999	198	2.77	548	0	548	0	0	548	548	0	
9-2000f	153	2.92	447	0	447	0	0	447	447	0	
0-2001f	180	2.79	503	0	503	0	0	503	503	0	
<b>Total Coarse Grains</b>											
8-1999	7,384	3.60	26,565	958	31,783	4,096	2,503	19,756	22,859	4,828	
9-2000f	6,930	3.86	26,767	1,028	32,623	4,535	2,663	19,747	23,023	5,065	
0-2001f	7,128	3.67	26,188	1,128	32,381	4,280	2,670	19,846	23,131	4,970	
<b>Canola</b>											
8-1999	5,421	1.41	7,843	157	8,163	3,900	3,063	542	3,649	614	373
9-2000f	5,564	1.58	8,798	150	9,562	4,100	3,000	645	3,687	1,775	275-315
0-2001f	4,950	1.45	7,200	150	9,125	4,100	3,200	585	3,825	1,200	265-305
<b>Flaxseed</b>											
8-1999	874	1.24	1,081	5	1,127	719	n/a	n/a	246	162	313
9-2000f	793	1.32	1,049	4	1,215	450	n/a	n/a	175	590	220-260
0-2001f	485	1.37	665	5	1,260	600	n/a	n/a	185	475	210-250
<b>Soybeans</b>											
8-1999	980	2.79	2,737	254	3,179	868	1,576	396	2,064	247	266
9-2000f	999	2.77	2,786	400	3,413	900	1,800	397	2,263	250	225-265
0-2001f	994	2.69	2,673	450	3,373	900	1,805	400	2,273	200	205-245
<b>Total Oilseeds</b>											
8-1999	7,275	1.58	11,461	417	12,469	5,487	4,639	938	5,959	1,023	
9-2000f	7,357	1.71	12,613	554	14,190	5,450	4,800	1,042	6,125	2,615	
0-2001f	6,429	1.64	10,538	605	13,758	5,600	5,005	985	6,283	1,875	
<b>Total Grains And Oilseeds</b>											
8-1999	25,336	2.45	62,102	1,455	74,417	24,214	10,015	24,892	36,897	13,217	
9-2000f	24,650	2.69	68,231	1,607	81,054	28,585	10,318	25,079	37,389	15,080	
0-2001f	24,732	2.54	62,866	1,759	79,705	27,780	10,560	24,092	37,680	14,245	

Aug.-July crop year except corn and soybeans which are Sept. - Aug.

Excludes imports of products.

Includes exports of products for wheat, oats, barley, and rye. Excludes exports of oilseed products.

Includes seed use.

Crop year average prices: No. 1 CWRS and No. 1 CWAD (CWB final price I/S St. Lawrence/Vancouver), Barley (No. 1 Feed, WCE cash I/S Lethbridge), Corn (No. 2 CE cash I/S, Chatham), Oats (No. 3 CW, WCE cash Track Minneapolis); Canola (No. 1 Canada, WCE cash I/S Vancouver); Flaxseed (No. 1 CW WCE cash I/S, Thunder Bay); Soybeans (No. 2, I/S, Chatham).

CWB Pool Return Outlook, January 2000.

Agriculture and Agri-Food Canada forecast February 2000.

Source: Statistics Canada, Cereals and Oilseeds Review Series, Cat. No. 22-007

# IGC WORLD WHEAT PRODUCTION, TRADE, UTILIZATION AND STOCKS

1960-61 to 1999-2000<sup>1</sup>

	Harvested Area -mn. ha-	Yield -t/ha-	Production million tonnes	Utilization	Trade	Ending Stocks	Stocks as % of Utilization
1960-61	202.3	1.19	241.0	235.0	43.0	n/a	n/a
1961-62	201.9	1.13	227.0	236.0	47.0	n/a	n/a
1962-63	206.2	1.24	258.0	248.0	43.0	n/a	n/a
1963-64	208.8	1.15	241.0	252.0	56.0	n/a	n/a
1964-65	217.2	1.27	276.0	262.0	51.0	n/a	n/a
1965-66	219.1	1.21	265.0	284.0	62.0	n/a	n/a
1966-67	219.2	1.42	311.0	286.0	56.0	n/a	n/a
1967-68	222.6	1.35	300.0	294.0	51.0	n/a	n/a
1968-69	227.3	1.46	332.0	308.0	46.0	n/a	n/a
1969-70	219.7	1.43	315.0	329.0	51.0	n/a	n/a
<b>10 Yr. avg.</b>	<b>214.4</b>	<b>1.30</b>	<b>276.6</b>	<b>273.4</b>	<b>50.6</b>	<b>n/a</b>	<b>n/a</b>
1970-71	209.5	1.52	319.0	342.0	54.0	n/a	n/a
1971-72	214.7	1.65	354.0	349.0	52.0	n/a	n/a
1972-73	212.8	1.64	348.0	366.0	68.0	n/a	n/a
1973-74	221.3	1.70	376.0	363.0	63.0	n/a	n/a
1974-75	222.8	1.63	364.0	368.0	63.0	n/a	n/a
1975-76	227.1	1.58	359.0	364.0	66.0	80.0	22.0
1976-77	234.3	1.81	425.0	380.0	62.0	121.0	31.8
1977-78	228.4	1.69	386.0	413.0	72.0	98.0	23.7
1978-79	229.5	1.97	451.0	428.0	72.0	120.0	28.0
1979-80	229.4	1.87	429.0	440.0	86.0	101.0	23.0
<b>10 Yr. avg.</b>	<b>223.0</b>	<b>1.71</b>	<b>381.1</b>	<b>381.3</b>	<b>65.8</b>	<b>104.0</b>	<b>25.7</b>
1980-81	236.8	1.88	445.0	452.0	94.1	114.0	25.2
1981-82	240.0	1.90	454.8	454.0	101.0	116.0	25.6
1982-83	239.5	2.02	482.6	465.0	96.1	132.0	28.4
1983-84	231.2	2.12	489.1	473.0	100.4	141.0	29.8
1984-85	232.1	2.21	512.6	495.0	103.2	159.0	32.1
1985-86	230.9	2.17	500.4	492.0	83.7	167.0	33.9
1986-87	229.0	2.32	531.3	521.0	90.0	176.0	33.8
1987-88	221.0	2.28	504.9	531.0	106.9	150.0	28.2
1988-89	219.5	2.28	500.2	532.0	97.9	114.0	21.4
1989-90	226.3	2.37	537.2	534.0	94.9	118.0	22.1
<b>10 Yr. avg.</b>	<b>230.6</b>	<b>2.15</b>	<b>495.8</b>	<b>494.9</b>	<b>96.8</b>	<b>138.7</b>	<b>28.1</b>
1990-91	229.6	2.58	592.4	569.0	92.3	144.0	25.3
1991-92	220.7	2.46	543.1	554.0	108.0	135.0	24.4
1992-93	221.2	2.54	561.6	553.0	105.2	142.0	25.7
1993-94	220.3	2.53	556.9	556.0	92.5	144.0	25.9
1994-95	215.3	2.44	525.8	549.0	91.9	120.8	22.0
1995-96	219.3	2.46	540.4	551.2	90.5	110.5	20.0
1996-97	230.1	2.53	582.2	582.4	95.4	112.0	19.2
1997-98	226.8	2.69	610.2	591.5	95.9	130.7	22.1
1998-99 <sup>2</sup>	224.5	2.61	586.8	593.2	94.0	124.3	21.0
<b>1999-2000<sup>3</sup></b>	<b>214.2</b>	<b>2.72</b>	<b>583.2</b>	<b>591.1</b>	<b>99.6</b>	<b>116.4</b>	<b>19.7</b>
<b>10 Yr. avg.</b>	<b>222.2</b>	<b>2.56</b>	<b>568.3</b>	<b>569.0</b>	<b>96.5</b>	<b>128.0</b>	<b>22.5</b>

World ending stocks are not available prior to 1975-76 crop year

<sup>1</sup> Includes durum wheat, wheat flour and products. Trade excludes intra-trade in the EU and FSU.

<sup>2</sup> Preliminary

<sup>3</sup> Forecast

# WORLD WHEAT PRODUCTION, TRADE, UTILIZATION AND STOCKS

1960-61 to 1999-2000<sup>1</sup>

	Harvested Area	Yield	Production	Trade	Utilization	Ending Stocks	Stocks as % of Utilization
	- min ha -	- t/ha -	million tonnes				- % -
<b>1960-61</b>	202.2	1.15	233.5	42.9	230.9	82.8	35.9
<b>1961-62</b>	203.5	1.08	220.0	46.8	233.1	69.9	30.0
<b>1962-63</b>	206.9	1.19	246.8	44.3	240.8	75.8	31.5
<b>1963-64</b>	206.3	1.12	230.4	56.0	235.9	70.3	29.8
<b>1964-65</b>	215.9	1.23	264.9	52.0	256.8	78.5	30.6
<b>1965-66</b>	215.5	1.20	259.3	61.0	277.1	60.7	21.9
<b>1966-67</b>	213.8	1.41	300.7	56.0	273.8	87.6	32.0
<b>1967-68</b>	219.2	1.33	291.9	51.0	281.9	97.7	34.6
<b>1968-69</b>	223.9	1.45	323.8	45.0	300.1	121.3	40.4
<b>1969-70</b>	217.8	1.40	304.0	50.0	321.8	103.5	32.2
<b>10 Yr. avg.</b>	<b>212.5</b>	<b>1.26</b>	<b>267.5</b>	<b>50.5</b>	<b>265.2</b>	<b>84.8</b>	<b>32.0</b>
<b>1970-71</b>	207.0	1.48	306.5	55.0	329.5	80.5	24.4
<b>1971-72</b>	212.7	1.62	344.1	52.0	335.4	89.2	26.6
<b>1972-73</b>	210.9	1.60	337.5	69.7	351.8	74.9	21.3
<b>1973-74</b>	217.0	1.69	366.1	63.0	358.3	82.7	23.1
<b>1974-75</b>	220.0	1.61	355.2	64.3	356.5	81.4	22.8
<b>1975-76</b>	225.3	1.56	352.6	66.7	347.3	86.7	25.0
<b>1976-77</b>	233.1	1.78	414.3	63.3	373.7	127.4	34.1
<b>1977-78</b>	227.2	1.66	377.8	72.8	396.0	109.2	27.6
<b>1978-79</b>	228.9	1.92	438.9	72.0	413.3	134.8	32.6
<b>1979-80</b>	228.5	1.83	418.3	86.0	431.9	121.3	28.1
<b>10 Yr. avg.</b>	<b>221.1</b>	<b>1.68</b>	<b>371.1</b>	<b>66.5</b>	<b>369.4</b>	<b>98.8</b>	<b>26.8</b>
<b>1980-81</b>	237.1	1.84	436.3	94.1	444.1	113.8	25.6
<b>1981-82</b>	239.0	1.86	445.1	101.3	445.1	113.7	25.5
<b>1982-83</b>	237.7	1.99	472.8	98.9	455.6	131.1	28.8
<b>1983-84</b>	229.3	2.11	484.4	103.8	469.0	146.4	31.2
<b>1984-85</b>	231.7	2.20	509.0	106.2	489.4	166.0	33.9
<b>1985-86</b>	229.9	2.15	494.9	84.7	490.3	170.6	34.8
<b>1986-87</b>	227.9	2.30	524.1	90.7	515.7	179.1	34.7
<b>1987-88</b>	219.7	2.26	496.0	115.6	527.2	147.8	28.0
<b>1988-89</b>	217.4	2.28	495.0	104.3	524.5	118.4	22.6
<b>1989-90</b>	225.8	2.36	533.2	103.8	532.7	118.9	22.3
<b>10 Yr. avg.</b>	<b>229.6</b>	<b>2.14</b>	<b>489.1</b>	<b>100.3</b>	<b>489.4</b>	<b>140.6</b>	<b>28.7</b>
<b>1990-91</b>	231.4	2.54	588.0	101.1	561.9	145.0	25.8
<b>1991-92</b>	222.5	2.44	542.9	111.2	555.5	132.5	23.9
<b>1992-93</b>	222.9	2.52	562.4	113.0	550.3	144.5	26.3
<b>1993-94</b>	222.0	2.52	558.8	101.7	561.6	141.7	25.2
<b>1994-95</b>	214.5	2.44	524.0	101.5	547.0	118.7	21.7
<b>1995-96</b>	219.2	2.46	538.5	99.5	549.3	107.9	19.6
<b>1996-97</b>	230.3	2.53	582.8	103.6	577.1	113.5	19.7
<b>1997-98</b>	227.9	2.67	609.4	103.3	584.6	138.3	23.7
<b>1998-99<sup>2</sup></b>	224.7	2.62	589.1	100.5	591.9	135.6	22.9
<b>1999-2000<sup>3</sup></b>	217.3	2.69	584.8	104.2	593.1	127.2	21.4
<b>10 Yr. avg.</b>	<b>223.3</b>	<b>2.54</b>	<b>568.1</b>	<b>104.0</b>	<b>567.2</b>	<b>130.5</b>	<b>23.0</b>

<sup>1</sup> Includes durum wheat, wheat flour and products.

World production and utilization statistics revised to include Former USSR production reported on a clean weight basis.

Wheat trade is on a July/June basis. Trade excludes EU intra-trade but includes Former USSR intra-trade from 1987-88.

<sup>2</sup> Preliminary

<sup>3</sup> Forecast

# WORLD WHEAT PRODUCTION

1989-90 to 1999-2000<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	10-yr avg	1999-2000P
- thousand tonnes -												
<b>IMPORTING AREAS</b>												
Western Europe <sup>2</sup>	769	818	852	744	894	808	949	933	875	953	860	891
Other W. Europe	769	818	852	744	894	808	949	933	875	953	860	891
Eastern Europe	40,796	41,274	38,483	26,505	30,135	33,782	34,979	26,125	34,345	33,736	34,016	28,931
Bulgaria	5,402	5,095	4,500	3,440	3,618	3,754	3,150	1,800	3,250	3,300	3,731	2,800
Hungary	6,509	6,161	6,008	3,444	3,020	4,860	4,800	3,900	5,270	4,895	4,867	2,650
Poland	8,462	9,026	9,270	7,368	8,242	7,659	8,668	8,579	8,193	9,537	8,500	9,100
Romania	7,857	7,311	5,490	3,048	5,300	6,187	7,700	3,165	7,186	5,200	5,844	4,800
Former Yugoslavia	5,599	6,359	6,725	3,775	4,655	4,820	4,700	2,925	4,550	4,800	4,891	3,500
Others	6,967	7,322	6,490	5,430	5,300	6,502	6,161	5,756	5,896	6,004	6,183	6,081
Former USSR	87,151	101,891	72,014	89,825	83,534	60,435	60,434	64,412	81,886	57,537	75,912	66,101
Baltics	1,555	1,621	1,107	1,256	1,335	806	962	1,395	1,545	1,500	1,308	1,500
Kazakhstan	10,783	16,197	6,889	18,285	11,659	9,052	6,490	7,700	8,950	4,700	10,071	11,200
Russia	44,004	49,596	38,900	46,170	43,500	32,100	30,100	34,900	44,200	26,900	39,037	31,000
Ukraine	27,400	30,374	21,155	19,508	21,831	13,857	16,273	13,550	18,404	14,937	19,729	13,500
Others	3,409	4,103	3,963	4,606	5,209	4,620	6,609	6,887	8,787	9,500	5,767	8,901
Africa	12,862	13,737	17,764	13,205	12,940	15,427	13,629	21,998	14,940	18,802	15,531	15,273
Algeria	1,150	775	1,800	1,750	1,100	715	1,500	2,980	670	2,200	1,464	1,500
Egypt	3,183	4,286	4,482	4,617	4,780	4,100	5,700	5,735	5,850	6,093	4,883	6,200
Morocco	3,927	3,614	4,939	1,562	1,573	5,523	1,100	5,918	2,317	4,378	3,485	2,100
South Africa	2,026	1,702	2,132	1,318	1,975	1,832	1,950	2,712	2,450	1,700	1,980	1,500
Tunisia	420	1,122	1,786	1,584	1,400	500	530	2,000	950	1,353	1,165	1,400
Others	2,156	2,238	2,625	2,374	2,112	2,757	2,849	2,656	2,703	3,078	2,555	2,573
Middle East	23,754	30,977	33,344	34,507	36,385	33,808	35,010	34,065	32,266	38,057	33,217	30,452
Iran	6,010	8,000	8,900	10,200	10,700	10,900	11,300	11,000	10,000	12,000	9,901	8,500
Iraq	491	1,200	1,500	1,400	1,700	1,500	1,500	1,400	1,100	1,300	1,309	800
Saudi Arabia	3,452	3,580	3,934	4,070	3,600	2,679	2,000	1,200	1,800	1,800	2,812	1,800
Syria	900	1,726	2,140	2,800	3,400	3,700	4,184	4,080	3,031	4,112	3,007	2,600
Turkey	12,500	16,000	16,500	15,500	16,500	14,700	15,500	16,000	16,000	18,500	15,770	16,500
Others	401	471	370	537	485	329	526	385	335	345	418	252
Asia-Pacific	164,894	167,845	170,847	177,995	184,939	179,829	190,334	195,548	215,673	201,469	184,937	210,631
Bangladesh	890	1,004	1,004	1,065	1,176	1,131	1,245	1,370	1,454	1,803	1,214	1,900
China	90,807	98,229	96,000	101,590	106,390	99,300	102,215	110,570	123,389	109,726	103,822	115,000
India	54,110	49,850	55,134	55,690	57,210	59,840	65,470	62,097	69,350	66,350	59,510	70,780
Japan	985	952	759	759	638	565	444	478	573	569	672	600
Pakistan	14,419	14,429	14,565	15,684	16,157	15,212	17,002	16,907	16,650	18,694	15,972	17,854
Others	3,683	3,381	3,385	3,207	3,368	3,781	3,958	4,126	4,257	4,327	3,747	4,497
Latin America <sup>2</sup>	12,552	9,856	9,443	8,690	8,128	8,831	7,251	9,460	8,927	7,742	9,068	7,840
Brazil	5,550	3,300	3,078	2,739	2,107	2,138	1,526	3,195	2,380	2,200	2,821	2,350
Chile	1,717	1,590	1,560	1,322	1,270	1,360	1,295	1,677	1,682	1,197	1,467	1,350
Mexico	4,000	3,930	4,061	3,621	3,582	4,151	3,468	3,107	3,639	3,250	3,681	3,100
Others	1,285	1,036	744	1,008	1,167	1,182	962	1,481	1,226	1,095	1,119	1,040
Others & unspecified	135	181	191	213	248	267	303	320	295	275	243	275
Sub-Total	342,913	366,579	342,938	351,684	357,201	333,187	342,889	352,862	389,207	358,571	353,803	360,394
<b>MAJOR EXPORTERS</b>												
Argentina	10,150	10,900	9,880	9,800	9,700	11,300	8,600	15,900	14,800	12,000	11,303	14,500
Australia	14,214	15,066	10,557	16,184	16,479	8,903	16,504	23,702	19,417	22,110	16,314	23,500
Canada	24,796	32,098	31,946	29,877	27,226	22,920	24,989	29,801	24,280	24,076	27,201	26,850
EU-15 <sup>3</sup>	85,667	89,095	93,709	87,719	82,930	84,541	86,161	98,506	94,181	103,046	99,556	96,890
U.S.	55,428	74,292	53,891	67,135	65,220	63,167	59,404	61,980	67,534	69,327	63,738	62,662
Sub-Total	190,255	221,451	199,983	210,715	201,555	190,831	195,658	229,889	220,212	230,559	209,111	224,402
<b>WORLD TOTAL</b>	<b>533,168</b>	<b>568,030</b>	<b>542,921</b>	<b>562,399</b>	<b>558,756</b>	<b>524,018</b>	<b>538,547</b>	<b>582,751</b>	<b>609,419</b>	<b>589,130</b>	<b>562,914</b>	<b>584,796</b>

P - Preliminary

<sup>1</sup> Includes durum wheat

<sup>2</sup> Production included under major exporters for EU-15 and Argentina.

<sup>3</sup> 1989-90 to 1993-94 adjusted to EU-15.

## WORLD WHEAT EXPORTS BY MAJOR EXPORTER AND MARKET SHARE (%)

1989-90 to 1999-2000 (July/June)<sup>1</sup>

Crop Year	Argentina	Australia	Canada <sup>2</sup>	EU <sup>3</sup>	United States	Others	Total
- thousand tonnes -							
1989-90	5,832	10,919	17,425	22,300	33,516	13,808	103,800
	5.6%	10.5%	16.8%	21.5%	32.3%	13.3%	100.0%
1990-91	4,824	11,736	22,130	22,200	28,328	11,882	101,100
	4.8%	11.6%	21.9%	22.0%	28.0%	11.8%	100.0%
1991-92	5,731	8,279	25,379	22,900	35,117	13,794	111,200
	5.2%	7.4%	22.8%	20.6%	31.6%	12.4%	100.0%
1992-93	7,326	9,543	20,328	23,700	37,136	14,967	113,000
	6.5%	8.4%	18.0%	21.0%	32.9%	13.2%	100.0%
1993-94	4,505	12,788	19,304	20,100	33,084	11,919	101,700
	4.4%	12.6%	19.0%	19.8%	32.5%	11.7%	100.0%
1994-95	7,862	7,818	20,771	17,100	32,533	15,416	101,500
	7.7%	7.7%	20.5%	16.8%	32.1%	15.2%	100.0%
1995-96	4,448	12,123	16,199	13,250	33,681	19,794	99,495
	4.5%	12.2%	16.3%	13.3%	33.9%	19.9%	100.0%
1996-97	10,079	18,191	19,366	17,834	27,093	11,034	103,597
	9.7%	17.6%	18.7%	17.2%	26.2%	10.7%	100.0%
1997-98	9,606	15,444	19,995	14,196	28,090	15,931	103,262
	9.3%	15.0%	19.4%	13.7%	27.2%	15.4%	100.0%
1998-99 <sup>4</sup>	8,700	16,000	14,724	14,589	29,035	17,416	100,464
	8.7%	15.9%	14.7%	14.5%	28.9%	17.3%	100.0%
<b>10-Year Average</b>	<b>6,891</b>	<b>12,284</b>	<b>19,562</b>	<b>18,817</b>	<b>31,761</b>	<b>14,596</b>	<b>103,912</b>
	6.6%	11.8%	18.8%	18.1%	30.6%	14.0%	100.0%
<b>1999-2000 <sup>5</sup></b>	<b>10,000</b>	<b>18,500</b>	<b>18,600</b>	<b>15,500</b>	<b>28,500</b>	<b>13,110</b>	<b>104,210</b>
	9.6%	17.8%	17.8%	14.9%	27.3%	12.6%	100.0%

<sup>1</sup> Includes durum (grain and semolina), wheat flour and products. Total trade excludes EU intra-trade but includes FSU intra-trade. Statistics for "EU" and "Total" prior to 1995-96 have been rounded off due to limitations in data.

<sup>2</sup> Canada - August/July.

<sup>3</sup> 1989-90 to 1993-94 exports adjusted to reflect EU-15.

<sup>4</sup> Preliminary

<sup>5</sup> Forecast

Because of rounding, percentages may not add.

Sources: Canada - Statistics Canada

- Agriculture & Agri-Food Canada

All other countries/total - United States Department of Agriculture

Feb-2000

**WORLD WHEAT IMPORTERS**

 1989-90 to 1999-2000 (July/June)<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99P	10-yr Avg	1999-2000F
- thousand tonnes -												
Western Europe	2,226	1,871	1,580	1,954	2,093	2,558	2,854	2,815	4,284	4,187	2,642	4,010
EU-15 (extra-trade)	1,700	1,500	1,200	1,400	1,700	2,100	2,545	2,442	3,858	3,761	2,221	3,600
Others	526	371	380	554	393	458	309	373	426	426	422	410
Eastern Europe	1,021	1,331	1,385	3,626	2,587	2,866	2,487	5,244	1,932	2,173	2,465	2,250
Albania	-	139	379	342	442	205	219	493	309	300	283	350
Poland	982	266	122	973	631	1,106	830	2,062	405	400	778	450
Romania	3	574	599	1,552	258	370	171	158	155	200	404	200
Others	36	352	285	759	1,256	1,185	1,267	2,531	1,063	1,273	1,001	1,250
Former USSR <sup>2</sup>	21,540	22,924	24,175	24,507	13,371	8,348	9,662	6,798	6,528	5,807	14,346	8,245
Baltics	815	850	835	869	345	640	223	328	225	404	553	350
Russia	9,100	10,849	13,645	14,470	5,000	2,143	5,315	2,629	3,085	2,500	6,874	4,500
Ukraine	1,100	910	1,100	1,483	100	274	183	50	102	78	538	300
Uzbekistan	3,250	3,325	3,100	3,200	3,500	2,000	1,321	1,036	732	380	2,184	500
Others	7,275	6,990	5,495	4,485	4,426	3,291	2,620	2,755	2,384	2,245	4,197	2,595
Africa	17,842	20,171	17,501	19,758	20,878	21,288	18,743	20,730	24,514	23,559	20,478	22,450
Algeria	3,860	4,360	3,399	3,643	4,800	5,807	3,782	3,630	5,221	4,200	4,270	4,500
Egypt	7,258	5,680	5,807	6,004	5,866	5,856	5,932	6,893	7,156	7,430	6,388	6,500
Libya	748	1,009	1,441	1,043	1,209	1,289	913	1,532	1,428	1,400	1,261	1,400
Morocco	1,069	1,954	1,552	2,811	2,403	1,256	2,336	1,587	2,565	2,557	2,009	2,500
Nigeria	300	480	450	753	818	560	674	956	1,105	1,466	756	1,200
South Africa	134	940	185	957	616	759	741	974	665	567	654	600
Tunisia	950	910	524	615	816	1,680	852	978	1,498	1,132	996	1,000
Others	3,323	4,838	4,143	3,932	4,352	4,081	3,513	4,180	4,876	4,807	4,205	4,750
Middle East	16,842	10,385	10,253	9,423	10,717	9,774	10,619	16,883	14,295	12,445	12,164	17,410
Iran	5,221	3,996	2,433	2,984	3,541	3,305	2,793	7,117	3,587	2,538	3,752	7,000
Iraq	3,242	124	2,330	420	737	689	515	1,136	2,707	2,028	1,411	2,500
Israel	673	764	822	730	1,369	980	920	958	1,297	1,491	1,000	1,500
Syria	1,283	1,726	808	732	520	250	39	14	25	125	552	100
Turkey	3,661	362	101	997	653	505	2,119	2,630	1,775	1,600	1,440	1,500
Yemen	1,023	1,473	1,751	1,617	1,784	2,085	2,030	2,389	2,366	2,036	1,855	2,000
Others	1,557	1,940	2,008	1,943	2,113	1,960	2,203	2,639	2,538	2,627	2,153	2,810
Asia-Pacific	30,413	29,818	39,425	33,132	29,806	36,251	35,798	30,590	30,537	28,931	32,469	27,595
Bangladesh	1,179	1,309	1,457	1,051	1,065	1,732	1,243	957	839	2,009	1,293	1,500
China	12,800	9,409	15,863	6,728	4,320	10,256	12,531	2,705	1,916	822	7,735	700
India	119	150	81	2,980	83	38	50	1,781	2,344	1,092	872	1,600
Indonesia	1,942	2,036	2,550	2,672	2,925	3,881	3,632	4,201	3,664	3,075	3,058	2,800
Japan	5,413	5,552	5,873	5,958	5,963	6,310	6,101	6,264	6,200	5,883	5,955	5,900
Korea, South	2,009	4,206	4,396	3,994	5,647	4,293	2,554	3,465	3,917	4,689	3,917	3,500
Malaysia	717	1,049	1,203	964	1,339	1,177	1,085	1,250	1,161	1,250	1,120	1,200
Pakistan	1,916	1,026	2,241	2,785	2,085	2,123	1,903	3,018	3,562	3,104	2,378	3,000
Philippines	1,322	1,488	1,734	1,963	2,220	2,060	2,000	2,189	1,987	2,348	1,934	2,200
Sri Lanka	778	583	783	868	825	942	942	889	761	867	822	900
Taiwan	820	846	848	931	918	897	1,094	1,026	1,029	1,000	941	1,000
Others	1,398	2,094	2,396	2,208	2,386	2,542	2,663	2,845	3,147	2,792	2,447	3,295
Latin America	7,530	10,032	13,574	14,412	15,754	15,804	14,297	15,353	15,937	18,149	14,084	17,576
Bolivia	157	273	394	433	453	453	327	388	298	325	350	350
Brazil	1,518	2,878	5,327	5,834	5,778	6,614	5,597	5,724	5,969	7,290	5,253	6,700
Chile	38	181	519	536	790	632	788	439	500	750	517	500
Colombia	646	693	678	883	920	835	1,003	939	1,055	1,097	875	1,100
Cuba	1,228	1,405	1,097	898	1,083	1,060	776	954	946	951	1,040	950
Ecuador	395	371	398	398	404	420	391	442	407	357	398	450
Mexico	220	486	739	1,350	1,828	1,374	1,581	1,940	2,166	2,485	1,417	2,500
Peru	911	973	1,197	1,064	1,343	1,214	956	1,292	1,265	1,375	1,159	1,400
Venezuela	862	1,110	1,181	1,126	1,037	1,144	1,022	1,204	1,224	1,264	1,117	1,300
Others	1,555	1,662	2,044	1,890	2,120	2,058	1,956	2,031	2,107	2,255	1,958	2,326
Others & Unspecified	6,588	4,568	3,367	6,188	6,494	4,811	5,038	5,184	5,245	5,413	5,263	4,674
U.S.	637	935	1,196	1,857	3,161	2,390	1,748	2,577	2,488	2,850	1,984	2,500
Others/Unspecified	5,949	3,633	2,111	4,331	3,333	2,221	3,287	2,807	2,757	2,563	3,279	2,174
<b>WORLD TOTAL</b>	<b>103,800</b>	<b>101,100</b>	<b>111,200</b>	<b>113,000</b>	<b>101,700</b>	<b>101,500</b>	<b>99,495</b>	<b>103,597</b>	<b>103,262</b>	<b>100,484</b>	<b>103,912</b>	<b>104,210</b>

P - Preliminary

F - Forecast

<sup>1</sup> Includes durum wheat and wheat products.

<sup>2</sup> Includes FSU intra-trade.

## WHEAT CARRYOVER STOCKS IN THE MAJOR EXPORTING COUNTRIES

Local Marketing Years 1989-90 to 1999-2000<sup>1</sup>

Crop Year	Argentina	Australia	Canada	EU <sup>2</sup>	United States	Others	Total
- thousand tonnes -							
1989-90	31	3,035	6,442	14,106	14,600	80,706	118,920
1990-91	822	2,823	10,285	17,936	23,627	89,536	145,029
1991-92	345	2,870	10,052	24,035	12,928	82,239	132,469
1992-93	45	5,017	12,195	24,134	14,442	88,703	144,536
1993-94	449	3,710	11,118	16,218	15,472	94,733	141,700
1994-95	150	2,405	5,680	11,706	13,787	84,972	118,700
1995-96	150	1,475	6,727	10,729	10,234	78,556	107,871
1996-97	800	2,395	9,046	13,764	12,073	75,416	113,494
1997-98	420	1,348	6,009	14,500	19,663	96,348	138,288
1998-99 <sup>3</sup>	300	2,400	7,365	19,022	25,744	80,735	135,566
<b>10-Year Average</b>	<b>351</b>	<b>2,748</b>	<b>8,492</b>	<b>16,615</b>	<b>16,257</b>	<b>85,194</b>	<b>129,657</b>
<b>1999-2000 <sup>4</sup></b>	<b>325</b>	<b>2,325</b>	<b>7,400</b>	<b>15,529</b>	<b>27,144</b>	<b>74,505</b>	<b>127,228</b>

<sup>1</sup> Includes durum.

<sup>2</sup> 1989-90 to 1993-94 adjusted to EU-15.

<sup>3</sup> Preliminary: Subject to revision.

<sup>4</sup> Forecast

Sources: Canada - Statistics Canada  
 - Agriculture & Agri-Food Canada  
 All other countries/total - United States Department of Agriculture

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**WORLD DURUM WHEAT PRODUCTION, TRADE, UTILIZATION AND STOCKS**  
 1980-81 to 1999-2000 (July/June)

	<u>Area</u>	<u>Yield</u>	<u>Production</u>	<u>Trade</u> <sup>1</sup>	<u>Utilization</u>	<u>Ending Stocks</u> <sup>2</sup>	<u>Stocks as % of Utilization</u>
	- min ha -	- t/ha -		million tonnes			- % -
<b>1980-81</b>	18.9	1.34	25.4	4.1	26.0	3.3	12.7
<b>1981-82</b>	18.9	1.42	26.9	4.8	25.5	4.7	18.4
<b>1982-83</b>	17.7	1.50	26.5	4.6	25.7	5.5	21.4
<b>1983-84</b>	16.9	1.35	22.8	4.0	23.8	4.5	18.9
<b>1984-85</b>	16.6	1.52	25.2	4.6	24.9	4.8	19.3
<b>1985-86</b>	17.0	1.58	26.9	4.6	26.6	5.1	19.2
<b>1986-87</b>	17.1	1.75	30.0	5.2	28.4	6.7	23.6
<b>1987-88</b>	18.1	1.60	28.9	6.6	28.6	7.0	24.5
<b>1988-89</b>	16.9	1.35	22.8	5.8	25.5	4.3	16.9
<b>1989-90</b>	17.9	1.51	27.1	6.5	27.1	4.3	15.9
<b>10 Yr. avg.</b>	<b>17.6</b>	<b>1.49</b>	<b>26.3</b>	<b>5.1</b>	<b>26.2</b>	<b>5.0</b>	<b>19.2</b>
<b>1990-91</b>	18.0	1.63	29.3	6.2	28.6	5.0	17.5
<b>1991-92</b>	18.2	1.91	34.8	6.7	31.5	8.3	26.3
<b>1992-93</b>	16.3	1.75	28.6	6.6	29.8	7.1	23.8
<b>1993-94</b>	15.8	1.66	26.2	5.5	29.2	4.1	14.0
<b>1994-95</b>	17.6	1.80	31.6	6.8	32.6	3.1	9.5
<b>1995-96</b>	16.7	1.78	29.7	5.4	29.4	3.4	11.6
<b>1996-97</b>	19.3	1.88	36.3	6.1	36.9	2.8	7.6
<b>1997-98</b>	17.1	1.75	30.0	7.7	30.6	2.2	7.2
<b>1998-99<sup>3</sup></b>	n/a	n/a	35.6	6.2	33.6	4.2	12.5
<b>1999-2000<sup>4</sup></b>	n/a	n/a	31.1	6.5	32.0	3.3	10.3
<b>10 Yr. avg.</b>	<b>n/a</b>	<b>n/a</b>	<b>31.3</b>	<b>6.4</b>	<b>31.4</b>	<b>4.4</b>	<b>13.8</b>

<sup>1</sup> Trade includes semolina from 1984-85.

<sup>2</sup> Major exporters only (Canada, EU, USA).

<sup>3</sup> Preliminary

<sup>4</sup> Forecast

## WORLD DURUM WHEAT PRODUCTION

1989-90 to 1999-2000

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	10 yr-avg	1999-2000 <sup>P</sup>
<b>IMPORTING AREAS</b>												
Europe <sup>1</sup>	60	60	60	60	40	-	-	-	4	33	32	n/a
FSU	2,000	2,000	2,000	2,000	2,000	2,200	2,300	2,500	2,500	1,800	2,130	2,500
Africa	3,315	3,354	5,185	3,620	3,095	3,811	2,441	5,828	2,387	4,504	3,754	3,200
Algeria	850	575	1,250	1,300	1,100	650	1,250	1,800	455	1,500	1,053	1,100
Libya	120	120	120	140	100	100	100	100	100	100	110	100
Morocco	1,767	1,617	2,216	682	587	2,350	439	2,270	882	1,544	1,435	800
Tunisia	333	897	1,424	1,323	1,133	436	472	1,623	700	1,100	944	1,200
Others	245	145	175	175	175	275	180	235	250	260	212	n/a
Middle East	6,350	6,850	6,350	5,550	6,000	7,264	7,167	7,088	6,240	6,760	6,582	5,500
Iraq	250	250	250	150	200	200	220	250	230	50	205	n/a
Syria	600	1,100	1,300	1,400	1,600	3,064	3,447	3,028	2,000	2,600	2,014	2,000
Turkey	5,500	5,500	5,000	4,000	4,200	4,000	3,500	3,800	4,000	4,000	4,350	3,500
Others	-	-	-	-	-	-	-	10	10	110	13	n/a
Asia Pacific	1,300	1,700	1,700	2,000	2,000	2,200	2,450	2,400	2,500	2,590	2,084	2,000
China	300	300	300	300	300	300	350	400	450	500	350	n/a
India	1,000	1,400	1,400	1,500	1,500	1,700	1,900	1,800	1,850	1,700	1,575	2,000
Others	-	-	-	200	200	200	200	200	200	390	159	n/a
Latin America <sup>2</sup>	270	370	470	420	670	580	565	450	500	500	480	n/a
Mexico	200	300	400	350	600	500	480	450	500	500	428	n/a
Others	70	70	70	70	70	80	85	-	-	-	52	n/a
Others & Unspecified	468	10	10	6	87	152	100	1,386	1,818	223	426	3,039
Sub-Total	13,763	14,344	15,975	13,656	13,892	16,207	15,023	19,652	15,949	16,410	15,487	16,239
<b>MAJOR EXPORTERS</b>												
Argentina	57	50	60	75	100	110	110	120	110	150	94	200
Canada	4,140	4,197	4,586	3,138	3,358	4,635	4,648	4,627	4,352	6,042	4,372	4,259
EU <sup>3</sup>	6,608	7,398	11,340	9,042	6,907	7,977	7,088	8,741	7,199	9,240	8,154	7,700
U.S.	2,510	3,332	2,830	2,719	1,918	2,632	2,784	3,160	2,390	3,758	2,803	2,702
Sub-Total	13,315	14,977	18,816	14,974	12,283	15,354	14,630	16,648	14,051	19,190	15,424	14,881
<b>WORLD TOTAL</b>	<b>27,078</b>	<b>29,321</b>	<b>34,791</b>	<b>28,630</b>	<b>26,175</b>	<b>31,561</b>	<b>29,653</b>	<b>36,300</b>	<b>30,000</b>	<b>35,600</b>	<b>30,911</b>	<b>31,100</b>

P - Preliminary

n/a - not available

<sup>1</sup> Includes other Western Europe and Eastern Europe but excludes EU. EU is included with the major exporters.

<sup>2</sup> Excludes Argentina

<sup>3</sup> EU-12 member states from 1989-90 to 1993-94; EU-15 from 1994-95.

Sources: Canada - Statistics Canada

United States - United States Department of Agriculture

All other countries/total - International Grains Council

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**WORLD DURUM WHEAT EXPORTS BY MAJOR EXPORTER AND MARKET SHARE (%)**  
**1989-90 to 1999-2000 (July/June)<sup>1</sup>**

<b>Crop Year</b>	<b>Canada <sup>2</sup></b>	<b>EU <sup>3</sup></b>	<b>United States</b>	<b>Others</b>	<b>Total <sup>4</sup></b>
- thousand tonnes -					
<b>1989-90</b>	2,847 42.2%	2,274 33.7%	1,502 22.3%	120 1.8%	<b>6,743</b> 98.2%
<b>1990-91</b>	3,232 49.1%	2,111 32.1%	1,216 18.5%	25 0.4%	<b>6,584</b> 99.6%
<b>1991-92</b>	3,091 43.5%	2,567 36.1%	1,335 18.8%	120 1.7%	<b>7,113</b> 98.3%
<b>1992-93</b>	2,279 35.9%	2,642 41.6%	1,275 20.1%	150 2.4%	<b>6,346</b> 97.6%
<b>1993-94</b>	2,903 52.4%	1,171 21.1%	1,185 21.4%	282 5.1%	<b>5,541</b> 94.9%
<b>1994-95</b>	4,028 58.7%	1,578 23.0%	994 14.5%	262 3.8%	<b>6,862</b> 96.2%
<b>1995-96</b>	3,222 62.0%	235 4.5%	826 15.9%	916 17.6%	<b>5,199</b> 82.4%
<b>1996-97</b>	4,094 65.4%	402 6.4%	1,046 16.7%	715 11.4%	<b>6,257</b> 88.6%
<b>1997-98 <sup>4</sup></b>	4,228 58.9%	285 4.0%	1,162 16.2%	1,500 20.9%	<b>7,175</b> 79.1%
<b>1998-99 <sup>5</sup></b>	3,848 63.3%	286 4.7%	1,031 17.0%	915 15.0%	<b>6,080</b> 85.0%
<b>10-Year Average</b>	<b>3,377</b> 52.9%	<b>1,355</b> 21.2%	<b>1,157</b> 18.1%	<b>501</b> 7.8%	<b>6,390</b> 92.2%
<b>1999-2000 <sup>6</sup></b>	3,800 60.4%	250 4.0%	1,089 17.3%	1,150 18.3%	<b>6,289</b> 81.7%

<sup>1</sup> Includes semolina

<sup>2</sup> August-July

<sup>3</sup> EU-12 member states from 1989-90; unified Germany from 1990-91; EU-15 from 1994-95; excludes EU intra-trade.

<sup>4</sup> Total represents the sum of individual exporter reports.

<sup>5</sup> Preliminary

<sup>6</sup> Forecast

Because of rounding, percentages may not add.

Sources: Canada - Statistics Canada

- Agriculture & Agri-Food Canada

United States - USDA "Inspections for Export" and USDA Supply/Demand for 1999-2000

EU and Others - International Grains Council

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## WORLD DURUM WHEAT IMPORTERS

1989-90 to 1999-2000 (July/June)<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98P	1998-99P	10-yr avg	1999-2000F
Western Europe	703	359	337	312	685	881	1,237	1,012	1,545	781	785	300
EU <sup>2</sup>	604	302	265	214	540	765	1,185	863	1,490	750	698	800
Other W. Europe	99	57	72	98	145	116	52	149	55	31	87	n/a
Eastern Europe	80	172	94	153	136	65	98	146	89	138	117	60
Poland	75	153	92	143	123	47	51	64	55	90	89	60
Others	5	19	2	10	13	18	47	82	34	48	28	n/a
FSU	1,102	1,165	1,777	783	2	22	31	19	50	13	496	n/a
Africa	3,271	3,188	3,022	3,014	2,941	4,533	2,610	2,577	4,161	2,821	3,214	3,120
Algeria	2,640	2,485	2,481	2,381	2,265	3,523	1,457	1,758	2,658	1,800	2,345	2,000
Libya	190	230	317	166	212	289	147	247	217	200	222	250
Morocco	2	59	44	260	292	55	337	353	520	450	237	470
Tunisia	320	144	22	12	33	516	449	123	551	250	242	400
Others	119	270	158	195	139	150	220	96	215	121	168	n/a
Middle East	296	114	103	309	292	70	237	802	165	146	253	20
Iran	4	5	-	-	-	-	-	609	-	-	62	n/a
Turkey	200	49	36	190	198	17	169	64	3	20	95	20
Others	96	65	67	119	94	53	68	738	162	126	159	n/a
Far East	221	207	168	700	304	255	277	281	315	495	322	300
Japan	138	140	132	161	109	79	116	248	247	250	162	300
Others	83	67	36	539	195	176	161	33	68	245	160	n/a
Latin America	243	390	573	653	646	578	684	788	700	902	616	730
Chile	-	50	96	113	121	103	117	40	96	150	89	135
Cuba	57	31	32	39	9	22	11	21	20	22	26	n/a
Mexico	1	4	35	125	T	19	36	53	70	70	41	70
Peru	-	-	22	32	145	88	108	161	130	180	87	185
Venezuela	136	237	272	288	266	233	313	368	287	300	270	340
Others	49	68	116	56	105	113	99	145	97	180	103	n/a
Others & Unspecified	1,742	1,843	2,403	1,948	711	622	390	477	797	1,162	1,210	1,470
U.S.	179	308	399	406	437	347	221	408	468	540	371	500
Others/Unspecified	1,563	1,535	2,004	1,542	274	275	169	69	329	622	838	970
<b>WORLD TOTAL</b>	<b>6,473</b>	<b>6,206</b>	<b>6,664</b>	<b>6,550</b>	<b>5,520</b>	<b>6,828</b>	<b>5,372</b>	<b>6,050</b>	<b>7,704</b>	<b>6,200</b>	<b>6,357</b>	<b>6,500</b>

P - preliminary

F - forecast

n/a - not available

<sup>1</sup> Includes semolina.

<sup>2</sup> Excludes intra-trade. 1989-90 adjusted to include GDR.

## DURUM WHEAT CARRYOVER STOCKS IN THE MAJOR EXPORTING COUNTRIES

Local Marketing Years 1989-90 to 1999-2000

Crop Year	Canada	EU <sup>1</sup>	United States	Total
- thousand tonnes -				
1989-90	1,362	1,618	1,361	4,341
1990-91	1,567	1,757	1,687	5,011
1991-92	2,206	4,600	1,497	8,303
1992-93	2,057	3,685	1,334	7,076
1993-94	1,703	1,585	762	4,050
1994-95	1,463	900	708	3,071
1995-96	1,973	700	680	3,353
1996-97	1,503	500	844	2,847
1997-98	757	700	708	2,165
1998-99 <sup>2</sup>	1,952	700	1,491	4,143
<b>10-Year Average</b>	<b>1,544</b>	<b>1,784</b>	<b>1,121</b>	<b>4,449</b>
<b>1999-2000 <sup>3</sup></b>	<b>1,400</b>	<b>200</b>	<b>1,785</b>	<b>3,385</b>

<sup>1</sup> EU-12 member states from 1989-90 including unified Germany from 1990-91; EU-15 from 1994-95.

<sup>2</sup> Preliminary: Subject to revision.

<sup>3</sup> Forecast

Sources: Canada - Statistics Canada  
                   - Agriculture & Agri-Food Canada  
                   EU - International Grains Council  
                   United States - United States Department of Agriculture

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## WORLD COARSE GRAIN PRODUCTION, TRADE, UTILIZATION AND STOCKS

1960-61 to 1999-2000<sup>1</sup>

	Harvested Area	Yield	Production	Trade	Utilization	Ending Stocks	Stocks as a % of Utilization
	- min ha -	- t/ha -	----- million tonnes -----				- % -
1960-61	316.3	1.39	439.4	24.0	432.4	109.8	25.4
1961-62	315.6	1.37	432.3	30.0	438.6	103.6	23.6
1962-63	314.5	1.43	448.6	31.0	450.8	101.4	22.5
1963-64	319.7	1.42	455.2	34.0	450.5	106.1	23.6
1964-65	315.4	1.46	460.6	35.0	468.6	98.1	20.9
1965-66	313.5	1.51	472.5	42.0	490.3	80.3	16.4
1966-67	315.3	1.61	508.9	40.0	505.9	83.3	16.5
1967-68	319.1	1.67	533.5	39.0	522.4	94.4	18.1
1968-69	317.8	1.68	533.9	37.0	530.5	97.8	18.4
1969-70	322.6	1.73	558.1	39.0	558.1	97.8	17.5
<b>10 Yr. avg.</b>	<b>317.0</b>	<b>1.53</b>	<b>484.3</b>	<b>35.1</b>	<b>484.8</b>	<b>97.3</b>	<b>20.1</b>
1970-71	323.3	1.73	559.2	46.0	573.5	83.5	14.6
1971-72	324.5	1.90	617.4	49.3	601.4	99.6	16.6
1972-73	317.5	1.87	594.2	59.3	612.6	81.2	13.3
1973-74	334.8	1.97	659.4	71.1	660.8	79.8	12.1
1974-75	332.7	1.87	622.7	65.0	612.9	89.6	14.6
1975-76	339.4	1.89	641.0	75.2	637.3	93.3	14.6
1976-77	342.0	2.02	692.0	83.9	671.6	113.8	16.9
1977-78	343.5	2.01	691.1	89.0	680.8	124.0	18.2
1978-79	340.8	2.18	744.2	93.1	730.8	137.4	18.8
1979-80	340.9	2.16	735.3	99.5	732.2	140.4	19.2
<b>10 Yr. avg.</b>	<b>333.9</b>	<b>1.96</b>	<b>655.7</b>	<b>73.1</b>	<b>651.4</b>	<b>104.3</b>	<b>16.0</b>
1980-81	340.6	2.12	723.3	107.9	739.3	125.5	17.0
1981-82	348.6	2.18	758.7	97.4	733.9	150.3	20.5
1982-83	338.1	2.29	775.2	89.8	743.7	181.8	24.4
1983-84	333.0	2.04	677.7	93.1	749.2	110.4	14.7
1984-85	334.8	2.41	806.3	100.0	772.6	144.1	18.7
1985-86	340.2	2.45	833.7	82.7	768.4	209.4	27.3
1986-87	336.6	2.45	824.5	83.2	798.2	235.7	29.5
1987-88	324.2	2.43	787.0	89.5	808.2	212.4	26.3
1988-89	324.2	2.23	722.9	98.2	788.1	147.2	18.7
1989-90	321.9	2.47	793.7	104.4	817.7	123.2	15.1
<b>10 Yr. avg.</b>	<b>334.2</b>	<b>2.31</b>	<b>770.3</b>	<b>94.6</b>	<b>771.9</b>	<b>164.0</b>	<b>21.2</b>
1990-91	316.4	2.62	828.8	88.8	817.2	134.8	16.5
1991-92	321.9	2.52	810.4	95.6	810.0	135.3	16.7
1992-93	325.2	2.68	871.5	93.0	843.6	163.0	19.3
1993-94	317.8	2.51	798.8	84.8	838.5	123.4	14.7
1994-95	323.6	2.69	871.0	97.8	857.3	137.2	16.0
1995-96	313.4	2.56	802.9	87.3	842.2	97.8	11.6
1996-97	322.1	2.82	908.2	94.8	877.4	128.6	14.7
1997-98	311.0	2.84	883.5	85.6	876.0	136.1	15.5
1998-99 <sup>2</sup>	308.9	2.88	890.7	96.2	871.0	155.8	17.9
1999-2000 <sup>3</sup>	303.6	2.88	873.1	98.1	880.8	148.2	16.8
<b>10 Yr. avg.</b>	<b>316.4</b>	<b>2.70</b>	<b>853.9</b>	<b>92.2</b>	<b>851.4</b>	<b>136.0</b>	<b>16.0</b>

<sup>1</sup> Coarse grains include barley, corn, rye, oats, sorghum, millet and mixed grains.

Trade excludes EU intra-trade but includes Former USSR intra-trade from 1987-88.

<sup>2</sup> Preliminary

<sup>3</sup> Forecast

## WORLD COARSE GRAIN PRODUCTION

1989-90 to 1999-2000<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	10-yr avg	1989-2000P
+ thousand tonnes +												
<b>IMPORTING AREAS</b>												
Western Europe <sup>2</sup>	1,741	1,988	1,956	1,444	1,688	1,486	1,596	1,794	1,702	1,688	1,705	1,687
Other W. Europe	1,741	1,988	1,956	1,444	1,688	1,486	1,596	1,794	1,702	1,688	1,705	1,687
Eastern Europe	57,846	51,361	64,691	43,539	44,893	46,842	52,163	50,060	58,970	51,121	52,148	51,777
Bulgaria	4,080	2,677	4,352	3,001	1,986	2,627	2,768	1,528	2,382	2,012	2,741	2,386
Hungary	8,401	6,059	9,657	6,273	5,352	6,200	6,308	7,140	8,445	7,586	7,140	8,305
Poland	18,496	18,988	18,541	12,594	15,240	14,115	17,242	16,717	17,210	17,613	16,676	16,480
Romania	10,426	9,788	13,778	9,049	10,164	10,837	12,077	11,063	14,954	10,140	11,267	11,930
Former Yugoslavia	10,474	7,771	12,578	7,533	7,173	8,243	9,278	8,918	10,688	9,158	9,181	7,843
Others	5,969	6,080	5,785	5,089	4,968	5,020	4,490	4,694	5,291	4,832	5,262	4,853
Former USSR	97,081	103,348	80,435	95,121	95,288	81,908	58,010	54,688	70,627	40,800	77,809	42,838
Baltics	3,932	3,924	4,215	2,621	3,253	2,602	2,050	2,647	2,789	2,780	3,077	2,760
Belarus	6,526	6,366	5,754	6,720	6,862	5,638	4,746	4,695	5,200	4,200	5,671	3,100
Kazakhstan	7,244	11,335	4,361	10,578	9,373	6,946	2,685	3,240	2,911	1,340	8,601	2,770
Russia	54,280	60,389	48,179	55,787	51,222	45,100	30,700	31,646	40,850	18,950	43,510	22,400
Ukraine	20,235	16,808	15,058	15,585	20,289	18,526	15,607	9,510	15,457	10,450	15,752	9,950
Others	4,884	4,548	4,868	3,830	4,270	3,096	3,222	2,930	3,440	2,900	3,797	1,858
Africa	83,111	62,745	61,106	71,590	73,076	71,478	78,822	82,633	71,903	78,386	71,404	78,687
Algeria	842	843	1,929	1,597	462	243	636	1,902	212	822	948	671
Egypt	5,280	5,379	5,221	5,285	5,085	6,580	6,278	6,761	6,944	6,540	6,015	7,020
Ethiopia	4,285	4,305	4,055	4,500	4,130	5,050	6,225	7,050	6,800	6,940	5,334	6,625
Morocco	3,474	2,637	3,679	1,341	1,155	3,967	680	4,081	1,744	2,315	2,507	1,645
Nigeria	9,200	13,795	14,286	14,708	17,066	17,667	18,500	16,900	18,830	17,450	15,840	17,800
South Africa	9,804	9,160	3,586	10,731	13,990	5,400	10,986	10,704	8,039	7,519	8,982	9,389
Sudan	2,050	1,612	3,850	4,425	2,630	4,670	2,850	4,850	3,850	5,100	3,848	5,100
Tanzania	3,900	3,000	3,050	3,070	3,225	2,850	3,810	3,620	2,950	3,275	3,275	3,050
Others	24,276	22,014	21,650	25,933	24,533	25,049	28,857	26,965	24,824	28,429	25,233	27,587
Middle East	13,081	17,216	18,139	17,220	19,499	18,739	18,725	18,009	17,021	17,787	17,344	16,065
Iran	2,908	3,650	3,310	3,265	3,275	3,420	3,515	3,420	3,270	3,170	3,320	2,320
Iraq	779	2,021	866	1,589	1,689	1,609	1,609	1,459	1,059	1,459	1,412	809
Saudi Arabia	516	575	608	645	1,349	2,279	1,454	654	604	604	929	604
Syria	410	660	1,172	1,410	1,810	1,710	1,935	1,933	1,316	1,224	1,356	640
Turkey	7,515	9,335	9,645	9,370	10,435	8,875	9,360	9,850	10,045	10,577	9,801	10,015
Others	953	975	538	961	941	846	852	693	727	753	824	677
Asia-Pacific	151,246	168,835	168,551	168,835	170,347	167,812	177,193	198,882	167,237	201,174	173,192	191,303
China	92,590	112,658	112,337	109,305	117,178	114,291	124,504	141,318	114,653	145,104	118,304	139,100
India	34,801	32,553	25,930	36,779	31,020	29,844	29,780	34,349	30,952	31,084	31,709	28,500
Indonesia	5,000	5,000	5,400	5,850	5,400	6,100	6,000	5,950	5,700	6,500	5,670	6,200
Pakistan	1,768	1,751	1,582	1,658	1,783	1,878	1,864	1,799	1,843	1,917	1,782	1,820
Philippines	4,412	5,102	4,490	4,810	5,030	4,534	4,324	4,215	3,528	4,894	4,534	4,500
Thailand	4,330	4,070	3,750	3,550	3,080	4,000	3,900	4,100	3,900	4,500	3,918	4,300
Others	8,339	7,701	7,062	7,083	6,876	7,165	6,821	6,661	7,175	7,184	6,883	
Latin America <sup>3</sup>	48,584	54,196	61,583	63,351	67,292	66,579	66,190	74,651	66,886	66,158	64,145	66,780
Brazil	23,122	25,035	31,426	29,856	33,760	38,216	33,238	36,802	31,710	33,312	31,628	32,912
Chile	1,069	1,164	1,213	1,198	1,223	1,232	1,193	1,308	1,256	916	1,177	1,005
Colombia	2,021	2,118	1,833	1,776	1,883	1,864	1,590	1,314	1,004	1,079	1,645	1,189
Mexico	14,090	18,448	19,778	22,396	22,732	20,448	23,865	26,491	23,114	24,535	21,580	26,175
Peru	1,180	731	574	914	908	918	790	861	923	975	877	965
Venezuela	1,595	1,451	1,541	1,328	1,012	1,240	1,500	1,609	1,360	1,350	1,398	1,370
Others	5,487	5,251	5,218	5,883	5,774	5,661	6,048	6,466	6,518	5,991	5,830	6,153
Others & unspecified	265	676	634	567	361	274	731	682	899	899	596	874
Sub-total	432,929	460,387	447,095	461,667	472,415	458,099	456,430	481,189	454,334	459,788	456,433	452,010
<b>MAJOR EXPORTERS</b>												
Argentina	8,333	10,774	14,451	14,079	13,289	13,855	14,085	18,931	24,668	17,735	15,020	19,895
Australia	7,030	6,774	8,143	8,251	9,842	5,406	9,689	10,227	9,523	9,601	8,447	8,005
Canada	23,417	24,487	21,781	19,626	24,311	23,548	24,145	28,358	25,115	26,585	24,136	26,787
EU-15 <sup>2</sup>	100,506	95,606	100,304	90,485	92,499	86,621	88,486	103,777	109,431	105,500	97,322	103,084
U.S.	221,522	230,738	218,620	277,416	188,485	283,470	210,038	265,714	260,427	271,474	242,580	263,375
Sub-Total	380,808	368,389	363,299	409,857	326,426	412,901	346,425	427,005	429,164	430,875	387,515	421,128
<b>WORLD TOTAL</b>	<b>793,737</b>	<b>826,776</b>	<b>810,384</b>	<b>871,524</b>	<b>798,841</b>	<b>871,000</b>	<b>802,855</b>	<b>908,194</b>	<b>863,466</b>	<b>860,683</b>	<b>845,948</b>	<b>873,138</b>

P - Preliminary

<sup>1</sup> Coarse grains include barley, rye, oats, corn, sorghum, millet and mixed grain.

<sup>2</sup> Production included under major exporters for EU-15 and Argentina.

<sup>3</sup> 1989-90 to 1993-94 adjusted to EU-15.

## WORLD COARSE GRAIN EXPORTS BY MAJOR EXPORTER AND MARKET SHARE (%)

1989-90 to 1999-2000 (October/September)<sup>1</sup>

Crop Year	Argentina	Australia	Canada <sup>2</sup>	EU <sup>3</sup>	United States	China (P.R.C.)	Others	Total
- thousand tonnes -								
1989-90	4,076	2,799	5,249	11,000	69,016	3,351	8,909	104,400
	3.9%	2.7%	5.0%	10.5%	66.1%	3.2%	8.5%	100.0%
1990-91	4,816	3,049	5,372	9,600	51,804	7,211	6,948	88,800
	5.4%	3.4%	6.0%	10.8%	58.3%	8.1%	7.8%	100.0%
1991-92	7,354	2,357	4,876	12,000	50,197	10,436	8,380	95,600
	7.7%	2.5%	5.1%	12.6%	52.5%	10.9%	8.8%	100.0%
1992-93	6,084	2,972	3,825	9,500	50,101	13,014	7,504	93,000
	6.5%	3.2%	4.1%	10.2%	53.9%	14.0%	8.1%	100.0%
1993-94	4,800	4,876	5,608	9,800	40,041	12,041	7,634	84,800
	5.7%	5.8%	6.8%	11.6%	47.2%	14.2%	9.0%	100.0%
1994-95	6,268	1,465	4,860	8,000	65,671	1,602	9,934	97,800
	6.4%	1.5%	5.0%	8.2%	67.1%	1.6%	10.2%	100.0%
1995-96	7,779	4,236	4,129	4,273	58,635	188	8,044	87,284
	8.9%	4.9%	4.7%	4.9%	67.2%	0.2%	9.2%	100.0%
1996-97	11,072	4,270	5,498	7,645	53,085	3,986	9,224	94,780
	11.7%	4.5%	5.8%	8.1%	56.0%	4.2%	9.7%	100.0%
1997-98	14,265	3,233	3,587	4,476	43,961	6,203	9,827	85,552
	16.7%	3.8%	4.2%	5.2%	51.4%	7.3%	11.5%	100.0%
1998-99 <sup>4</sup>	8,475	4,752	3,259	10,450	57,710	3,354	8,232	96,232
	8.8%	4.9%	3.4%	10.9%	60.0%	3.5%	8.6%	100.0%
<b>10-Year Average</b>	<b>7,499</b>	<b>3,401</b>	<b>4,626</b>	<b>8,674</b>	<b>54,022</b>	<b>6,139</b>	<b>8,464</b>	<b>92,825</b>
	8.1%	3.7%	5.0%	9.3%	58.2%	6.6%	9.1%	100.0%
<b>1999-2000 <sup>5</sup></b>	<b>9,400</b>	<b>3,215</b>	<b>3,700</b>	<b>11,700</b>	<b>54,126</b>	<b>8,030</b>	<b>7,945</b>	<b>98,116</b>
	9.6%	3.3%	3.8%	11.9%	55.2%	8.2%	8.1%	100.0%

<sup>1</sup> Coarse Grains include barley, rye, oats, corn, sorghum and millet; excludes products. Statistics for the "EU" and "Total" prior to 1995-96 have been rounded off due to limitations in data.

<sup>2</sup> Canada: August-July; includes exports through unlicensed channels.

<sup>3</sup> Adjusted to EU-15 for 1989-90 to 1993-94; excludes EU intra-trade.

<sup>4</sup> Preliminary

<sup>5</sup> Forecast

Because of rounding, percentages may not add.

Sources: Canada - Statistics Canada  
- Agriculture & Agri-Food Canada  
All other countries/total - United States Department of Agriculture

Feb-2000

## WORLD COARSE GRAIN IMPORTERS

1989-90 to 1999-2000<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99P	10-yr avg.	1999-2000F
- thousand tonnes -												
<b>Western Europe</b>	5,329	3,880	2,278	2,588	3,229	5,386	4,739	3,340	2,846	3,751	3,735	3,351
EU-15(extra-trade)	4,900	3,600	2,000	2,100	2,800	4,700	4,232	2,834	2,405	3,310	3,288	2,910
Other W. Europe	429	280	278	488	429	666	507	506	441	441	447	441
<b>Eastern Europe</b>	2,896	2,783	874	4,046	2,359	1,847	1,468	2,611	1,199	1,565	2,165	1,355
Bulgaria	23	333	-	182	48	3	74	65	9	-	74	-
Hungary	105	479	9	3	267	87	45	67	13	30	111	30
Poland	681	44	37	2,332	303	973	864	1,111	581	375	730	625
Romania	1,014	1,384	553	951	827	84	68	195	142	175	537	150
Others	1,073	563	275	578	914	700	417	1,173	454	985	713	550
<b>Former USSR<sup>2</sup></b>	26,695	18,459	15,701	10,495	3,994	1,711	1,471	1,172	571	1,900	8,217	1,480
Baltics	2,160	1,945	865	655	300	429	478	230	88	100	725	100
Russia	13,790	9,729	7,735	5,853	2,849	771	955	846	308	1,620	4,446	1,120
Ukraine	2,600	1,150	1,553	1,564	239	162	14	16	9	-	731	-
Uzbekistan	2,050	1,675	1,000	287	96	53	-	20	5	5	519	5
Others	6,095	3,960	4,548	2,136	510	296	24	60	163	175	1,797	255
<b>Africa</b>	4,999	5,843	10,475	10,254	8,073	7,811	5,130	9,233	8,199	10,913	8,093	10,880
Algeria	1,432	1,347	928	1,606	1,954	1,246	587	1,187	1,295	1,775	1,336	1,700
Egypt	1,254	2,060	1,442	1,777	2,213	2,695	2,287	3,229	3,268	3,775	2,400	4,075
Libya	1,021	783	327	848	823	454	218	999	567	600	664	600
Morocco	129	372	466	935	493	919	559	761	827	1,888	735	1,780
South Africa	333	146	3,607	2,239	73	457	432	462	274	450	847	760
Tunisia	483	324	266	321	683	729	559	703	516	975	556	600
Others	347	811	3,439	2,528	1,834	1,311	488	1,892	1,452	1,450	1,888	1,365
<b>Middle East</b>	11,414	9,199	12,024	10,177	10,075	10,887	10,579	15,324	10,633	13,660	11,397	14,275
Iran	1,558	1,169	899	1,331	1,183	1,448	1,497	2,275	1,303	1,350	1,401	2,200
Israel	870	905	912	1,421	1,026	1,253	1,149	1,498	939	1,350	1,132	1,450
Jordan	677	337	943	634	799	912	850	1,057	696	1,000	791	950
Saudi Arabia	4,985	5,200	7,907	4,795	5,740	5,190	4,801	7,117	5,295	6,400	5,741	6,300
Turkey	1,135	315	228	692	183	542	818	1,085	842	1,150	699	1,000
Others	2,209	1,273	1,135	1,304	1,144	1,542	1,484	2,292	1,558	2,410	1,633	2,375
<b>Asia-Pacific</b>	36,929	36,046	37,957	38,408	37,750	47,373	43,516	42,091	38,770	39,661	39,850	42,015
China	1,023	915	1,069	647	1,318	6,374	2,982	2,125	1,542	2,820	2,060	3,050
Japan	21,513	21,670	21,844	22,120	21,322	20,681	20,242	20,526	20,984	20,659	21,156	20,440
Malaysia	1,319	1,370	1,751	1,967	1,955	2,357	2,407	2,485	2,145	2,500	2,026	2,600
South Korea	6,302	5,634	6,449	6,716	5,776	9,009	10,115	8,730	7,598	7,747	7,408	9,405
Taiwan	5,590	5,599	5,558	5,889	5,886	6,623	6,040	6,013	4,757	4,745	5,670	4,880
Others	1,182	858	1,286	1,069	1,493	2,329	1,750	2,212	1,744	1,390	1,531	1,640
<b>Latin America</b>	12,172	9,287	11,145	10,601	12,113	14,479	16,110	14,394	17,348	19,142	13,679	19,246
Brazil	774	1,075	710	1,335	1,389	1,864	617	656	1,431	1,093	1,092	1,700
Chile	40	273	469	411	459	568	553	837	859	1,333	580	1,280
Colombia	68	169	537	674	1,401	1,281	1,799	1,932	1,957	1,700	1,152	1,845
Mexico	8,163	5,151	6,251	4,585	4,939	5,851	8,563	5,415	7,980	9,092	6,599	8,750
Peru	499	756	910	639	818	1,113	904	906	1,309	1,060	891	1,280
Venezuela	617	321	631	1,139	1,094	1,259	1,142	1,500	1,161	1,500	1,036	1,250
Others	2,011	1,542	1,637	1,818	2,033	2,543	2,532	3,148	2,651	3,384	2,328	3,181
<b>Others &amp; Unspecified</b>	8,866	6,903	7,146	8,531	10,007	13,026	8,503	9,449	8,391	8,950	8,977	8,424
USA	1,321	1,829	2,195	1,515	4,804	3,115	2,370	3,270	2,934	2,659	2,581	2,750
Others/Unspecified	7,545	5,074	4,951	7,016	5,403	9,911	6,133	6,179	5,457	6,291	6,396	5,874
<b>WORLD TOTAL</b>	<b>104,400</b>	<b>88,800</b>	<b>95,600</b>	<b>93,000</b>	<b>84,800</b>	<b>97,800</b>	<b>87,284</b>	<b>94,780</b>	<b>85,552</b>	<b>96,232</b>	<b>92,825</b>	<b>98,116</b>

P - Preliminary

F - Forecast

<sup>1</sup> Coarse grains include barley, rye, oats, corn, sorghum, millet and mixed grain.

<sup>2</sup> Includes FSU intra-trade.

## COARSE GRAINS CARRYOVER STOCKS IN THE MAJOR EXPORTING COUNTRIES

Local Marketing Years 1989-90 to 1999-2000<sup>1</sup>

Crop Year	Argentina	Australia	Canada	European Union <sup>2</sup>	United States	China (P.R.C.)	Others	Total
- thousand tonnes -								
1989-90	452	703	4,328	13,607	45,655	16,323	42,165	123,233
1990-91	668	360	5,449	15,392	47,780	26,148	39,016	134,813
1991-92	1,129	1,177	4,869	20,917	33,992	32,675	40,541	135,300
1992-93	1,473	1,374	5,261	20,342	63,092	29,007	42,451	163,000
1993-94	1,523	893	4,975	18,032	27,383	26,759	43,823	123,388
1994-95	1,426	491	3,348	12,919	45,338	28,762	44,918	137,202
1995-96	714	661	2,914	10,124	14,439	35,700	33,239	97,791
1996-97	1,107	670	4,751	12,214	27,009	46,539	36,338	128,628
1997-98	2,302	1,138	4,260	21,892	38,151	27,101	41,277	136,121
1998-99 <sup>3</sup>	1,618	660	4,828	25,086	51,373	40,117	32,126	155,808
<b>10-Year Average</b>	<b>1,241</b>	<b>813</b>	<b>4,498</b>	<b>17,053</b>	<b>39,421</b>	<b>30,913</b>	<b>39,589</b>	<b>133,528</b>
<b>1999-2000<sup>4</sup></b>	<b>1,579</b>	<b>657</b>	<b>5,065</b>	<b>23,082</b>	<b>49,436</b>	<b>39,917</b>	<b>28,441</b>	<b>148,177</b>

<sup>1</sup> Coarse Grains include barley, rye, oats, corn, sorghum and millet.

<sup>2</sup> 1989-90 to 1993-94 adjusted to EU-15.

<sup>3</sup> Preliminary: Subject to revision.

<sup>4</sup> Forecast

Sources: Canada - Statistics Canada  
 - Agriculture & Agri-Food Canada  
 All other countries/total - United States Department of Agriculture

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## WORLD BARLEY PRODUCTION, TRADE, UTILIZATION AND STOCKS

1980-81 to 1999-2000 (October/September)<sup>1</sup>

	Harvested Area - min ha -	Yield - t/ha -	Production	Trade	Utilization	Stocks	
						----- million tonnes -----	
						Ending Stocks	as % of Utilization
1980-81	78.6	2.00	157.4	14.0	158.3	18.3	11.6
1981-82	81.6	1.83	149.5	14.1	151.8	16.0	10.6
1982-83	78.8	2.05	161.2	13.3	155.8	21.5	13.8
1983-84	79.8	1.99	158.5	16.5	164.5	15.5	9.4
1984-85	79.2	2.15	170.5	18.0	162.9	23.1	14.2
1985-86	79.9	2.17	173.6	18.4	167.2	29.6	17.7
1986-87	79.4	2.24	178.1	18.6	173.8	33.8	19.5
1987-88	78.7	2.23	175.3	16.0	173.6	33.4	19.2
1988-89	76.4	2.15	164.0	15.9	166.2	31.1	18.7
1989-90	73.6	2.26	166.1	17.7	170.5	26.7	15.7
<b>10 Yr. avg.</b>	<b>78.6</b>	<b>2.11</b>	<b>165.4</b>	<b>16.2</b>	<b>164.5</b>	<b>24.9</b>	<b>15.1</b>
1990-91	72.9	2.46	179.2	19.8	176.1	29.8	16.9
1991-92	76.4	2.22	169.8	19.0	166.0	33.7	20.3
1992-93	72.7	2.29	166.1	16.7	166.5	33.0	19.8
1993-94	73.7	2.29	169.1	18.7	169.1	32.9	19.5
1994-95	73.0	2.20	160.9	15.6	165.8	28.1	16.9
1995-96	68.6	2.07	142.1	13.2	150.8	19.4	12.8
1996-97	66.0	2.33	153.5	17.9	149.3	23.6	15.8
1997-98	65.0	2.38	154.6	12.8	146.2	32.0	21.9
1998-99 <sup>2</sup>	61.2	2.24	137.2	17.4	140.2	29.0	20.7
<b>1999-2000<sup>2</sup></b>	<b>56.8</b>	<b>2.31</b>	<b>128.7</b>	<b>17.0</b>	<b>133.5</b>	<b>24.1</b>	<b>18.1</b>
<b>10 Yr. avg.</b>	<b>68.6</b>	<b>2.28</b>	<b>156.1</b>	<b>16.8</b>	<b>156.3</b>	<b>28.6</b>	<b>18.3</b>

<sup>1</sup> World production and utilization statistics revised to include Former USSR production reported on a clean weight basis.

Trade excludes products and EU intra-trade. FSU intra-trade is included in world trade from 1992-93.

<sup>2</sup> Preliminary

# WORLD BARLEY PRODUCTION

1989-90 to 1999-2000

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	10-yr avg	1999-2000P
- thousand tonnes -												
<b>IMPORTING AREAS</b>												
Western Europe <sup>1</sup>	947	1,080	1,049	819	984	797	880	1,034	976	949	952	944
Switzerland	360	347	356	348	367	285	303	362	314	327	337	325
Others	587	733	693	471	617	512	577	672	662	622	615	619
Eastern Europe	14,533	14,405	14,826	11,586	10,800	10,996	11,301	9,517	12,009	10,560	12,053	9,731
Bulgaria	1,568	1,345	1,495	1,192	950	1,143	1,300	500	800	750	1,104	700
Hungary	1,324	1,358	1,555	1,722	1,130	1,550	1,408	930	1,380	1,305	1,366	1,050
Poland	3,909	4,217	4,257	2,819	3,300	2,686	3,278	3,437	3,866	3,612	3,538	3,400
Romania	3,440	2,680	2,950	1,678	1,550	1,610	1,700	1,110	1,889	1,240	1,985	1,000
Others	4,292	4,805	4,569	4,175	3,870	4,007	3,615	3,540	4,074	3,653	4,060	3,581
Former USSR	44,857	52,574	41,534	52,293	54,758	53,432	32,484	29,330	36,127	21,390	41,875	22,652
Baltics	2,515	2,488	3,081	1,676	2,128	1,912	1,462	1,887	1,940	1,930	2,100	1,930
Belarus	2,976	2,908	3,032	2,934	3,165	3,014	1,965	2,194	2,400	1,900	2,649	1,300
Kazakhstan	5,310	8,500	3,085	8,511	7,149	5,497	2,178	2,700	2,670	1,100	4,670	2,250
Russia	22,201	27,235	22,174	26,989	26,900	27,000	15,800	15,900	20,800	9,800	21,480	10,600
Ukraine	10,090	9,168	8,047	10,106	13,550	14,508	9,633	5,725	7,407	5,870	9,410	6,400
Others	1,765	2,275	2,115	2,077	1,866	1,501	1,416	944	910	790	1,566	172
Africa	5,787	5,236	7,368	5,080	3,169	6,111	4,095	8,843	3,756	5,085	5,431	4,381
Algeria	790	800	1,800	1,500	410	240	584	1,800	190	720	883	600
Morocco	2,999	2,138	3,253	1,081	1,019	3,720	600	3,831	1,324	1,970	2,194	1,400
South Africa	291	262	170	265	230	275	300	176	182	215	237	100
Tunisia	200	478	721	570	160	145	835	861	200	300	447	415
Others	1,507	1,558	1,424	1,664	1,350	1,731	1,776	1,975	1,860	1,860	1,671	1,836
Middle East	9,252	13,082	12,168	12,695	14,709	14,615	14,319	13,432	12,237	12,634	12,914	10,164
Iran	2,850	3,500	3,100	3,050	3,050	3,050	2,950	2,700	2,500	2,300	2,905	1,600
Iraq	663	1,900	800	1,300	1,400	1,300	1,300	1,200	800	1,200	1,186	600
Saudi Arabia	350	372	394	406	1,100	2,025	1,200	450	400	400	710	400
Syria	271	500	917	1,090	1,550	1,480	1,705	1,653	983	869	1,102	360
Turkey	4,900	8,600	6,800	6,500	7,300	6,500	6,900	7,200	7,300	7,600	6,780	7,000
Others	218	210	157	349	309	260	264	229	254	265	252	204
Asia-Pacific	8,069	7,729	7,392	7,457	7,001	6,683	6,839	6,594	6,408	6,262	7,044	5,598
China	4,852	4,903	4,622	4,665	4,327	4,411	4,089	4,000	4,000	3,500	4,337	3,000
India	1,722	1,486	1,640	1,700	1,510	1,310	1,730	1,510	1,462	1,669	1,574	1,500
Japan	371	346	268	286	271	225	218	233	193	144	256	160
Korea, South	715	576	485	449	450	324	403	412	259	400	447	400
Others	409	418	377	357	443	413	399	439	495	549	430	538
Latin America <sup>1</sup>	1,352	1,294	1,294	1,426	1,179	1,181	1,151	1,521	1,308	1,431	1,308	1,370
Brazil	248	210	110	150	110	110	100	245	345	310	194	300
Chile	92	107	110	84	100	88	92	81	115	81	95	75
Colombia	99	102	110	90	80	100	45	40	20	20	71	20
Mexico	480	543	586	577	473	343	417	614	380	585	500	575
Peru	125	80	110	110	110	110	100	100	150	150	115	140
Uruguay	203	133	158	300	130	195	335	341	196	185	218	160
Others	105	119	110	115	176	155	62	100	100	100	114	100
Others & Unspecified	326	435	382	347	390	393	302	385	406	390	375	400
Sub-total	85,123	95,835	86,013	91,703	92,990	94,128	71,341	70,456	73,222	58,681	81,949	55,210
<b>MAJOR EXPORTERS</b>												
Argentina	343	303	585	500	455	350	385	533	920	540	489	400
Australia	4,121	4,184	4,606	5,460	6,856	2,913	5,823	6,696	6,482	5,880	5,292	4,700
Canada	11,784	13,441	11,817	11,032	12,972	11,692	13,033	15,562	13,527	12,709	12,737	13,196
EU <sup>2</sup>	55,967	56,206	56,908	47,457	47,039	43,687	43,713	51,716	52,808	51,901	50,720	49,025
U.S.	8,800	9,192	10,110	9,908	8,666	8,162	7,824	8,544	7,835	7,687	8,671	6,137
Sub-Total	81,015	83,326	83,807	74,357	76,068	66,804	70,778	83,051	81,372	78,497	77,910	73,458
<b>WORLD TOTAL</b>	<b>166,138</b>	<b>179,161</b>	<b>169,820</b>	<b>166,060</b>	<b>169,078</b>	<b>160,932</b>	<b>142,119</b>	<b>153,507</b>	<b>154,594</b>	<b>137,178</b>	<b>159,869</b>	<b>128,668</b>

P - Preliminary

<sup>1</sup> Production included under major exporters for EU-15 and Argentina.

<sup>2</sup> 1989-90 to 1993-94 adjusted to EU-15.

## WORLD BARLEY EXPORTS BY MAJOR EXPORTER AND MARKET SHARE (%)

1989-90 to 1999-2000 (October/September)<sup>1</sup>

Crop Year	Australia	Canada <sup>2</sup>	EU <sup>3</sup>	United States	Others	Total
- thousand tonnes -						
1989-90	2,447	4,230	7,905	1,798	1,323	17,703
	13.8%	23.9%	44.7%	10.2%	7.5%	100.0%
1990-91	2,683	4,536	7,053	1,507	4,034	19,813
	13.5%	22.9%	35.6%	7.6%	20.4%	100.0%
1991-92	1,951	3,341	8,305	2,090	3,332	19,019
	10.3%	17.6%	43.7%	11.0%	17.5%	100.0%
1992-93	2,600	2,704	5,147	1,611	4,633	16,695
	15.6%	16.2%	30.8%	9.6%	27.8%	100.0%
1993-94	4,232	3,836	6,245	1,553	2,826	18,692
	22.6%	20.5%	33.4%	8.3%	15.1%	100.0%
1994-95	1,356	3,009	5,061	1,355	4,771	15,552
	8.7%	19.4%	32.5%	8.7%	30.7%	100.0%
1995-96	3,375	2,336	2,480	1,182	3,815	13,188
	25.6%	17.7%	18.8%	9.0%	28.9%	100.0%
1996-97	3,967	3,439	6,183	1,214	3,095	17,898
	22.2%	19.2%	34.5%	6.8%	17.3%	100.0%
1997-98	2,838	2,127	2,856	1,066	3,889	12,776
	22.2%	16.6%	22.4%	8.3%	30.4%	100.0%
1998-99 <sup>4</sup>	4,267	1,100	8,200	600	3,272	17,439
	24.5%	6.3%	47.0%	3.4%	18.8%	100.0%
<b>10-Year Average</b>	<b>2,972</b>	<b>3,066</b>	<b>5,944</b>	<b>1,398</b>	<b>3,499</b>	<b>16,878</b>
	17.6%	18.2%	35.2%	8.3%	20.7%	100.0%
<b>1999-2000 <sup>5</sup></b>	<b>2,800</b>	<b>1,800</b>	<b>9,200</b>	<b>600</b>	<b>2,570</b>	<b>16,970</b>
	16.5%	10.6%	54.2%	3.5%	15.1%	100.0%

<sup>1</sup> Excludes malt; Canada: August-July.

<sup>2</sup> Canada: August-July

<sup>3</sup> EU-12 member states from 1989-90; unified Germany; EU-15 from 1994-95; excludes EU intra-trade.

<sup>4</sup> Preliminary

<sup>5</sup> Forecast

Because of rounding, percentages may not add.

Sources: Canada - Statistics Canada

- Agriculture & Agri-Food Canada

All other countries/total - United States Department of Agriculture

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## WORLD BARLEY IMPORTERS

1989-90 to 1999-2000 (October/September)<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	10-yr avg	1999-2000F
- thousand tonnes -												
Western Europe	648	172	165	174	259	534	436	201	285	280	315	280
EU (extra-trade) <sup>2</sup>	501	101	36	38	98	180	269	77	109	100	151	100
Other Western Europe	147	71	129	136	161	354	167	124	176	180	165	180
Eastern Europe	281	1,204	205	1,501	1,545	973	675	1,019	344	555	830	530
Poland	129	-	12	677	120	724	449	334	175	150	277	100
Others	152	1,204	193	824	1,425	249	226	685	169	405	553	430
Former USSR <sup>3</sup>	5,845	6,960	3,475	2,604	373	718	1,015	602	227	580	2,240	350
Russia	1,275	3,555	809	1,159	83	562	665	475	168	450	920	250
Others	4,570	3,405	2,666	1,445	290	156	350	127	59	130	1,320	100
Africa	1,189	1,021	783	1,615	1,943	1,501	428	1,333	1,287	2,650	1,375	2,225
Algeria	292	71	105	352	622	305	1	192	352	675	297	600
Libya	740	725	239	653	686	255	46	653	291	400	469	400
Morocco	-	200	250	591	120	372	130	73	274	1,000	301	900
Tunisia	124	5	2	5	408	502	231	229	160	350	204	100
Others	33	20	187	14	107	87	20	186	190	225	105	225
Middle East	6,513	6,016	8,279	5,600	6,759	6,016	5,461	8,455	5,647	7,750	6,650	8,100
Cyprus	325	222	361	279	206	195	301	499	239	225	285	225
Iran	609	387	-	174	388	356	190	772	403	600	388	1,000
Iraq	375	-	-	1	10	1	2	-	-	-	39	-
Israel	229	410	349	571	670	351	162	311	326	600	398	700
Jordan	199	144	340	339	421	546	581	615	211	500	390	500
Saudi Arabia	4,162	4,367	6,940	3,917	4,648	4,250	3,876	5,841	4,061	4,900	4,696	4,800
Turkey	339	71	21	96	150	76	59	17	147	150	113	100
U.A.E.	82	138	133	140	93	127	122	169	118	250	137	250
Others	193	277	135	83	173	114	168	231	142	525	204	525
Asia-Pacific	2,185	2,723	2,863	2,607	3,665	3,268	2,975	3,740	2,887	3,650	3,056	4,050
China	581	915	1,009	647	1,318	1,365	1,399	2,036	1,176	2,000	1,245	2,400
Japan	1,325	1,508	1,530	1,663	1,741	1,476	1,307	1,431	1,435	1,400	1,482	1,400
Korea, South	32	47	78	55	67	121	52	81	65	100	70	100
Taiwan	247	253	248	242	539	306	213	192	211	150	260	150
Others	-	-	-	-	-	-	4	-	1,178	2,000	318	2,400
Latin America	486	530	599	444	637	528	1,130	750	719	540	634	490
Brazil	95	147	200	127	163	163	331	143	107	100	158	100
Colombia	44	121	177	156	251	145	264	199	208	100	167	100
Mexico	184	139	150	89	87	110	324	131	196	150	156	100
Others	143	123	72	72	136	110	211	277	208	190	154	190
Others & Unspecified	576	1,187	2,650	2,150	3,511	2,014	1,068	1,798	1,380	1,434	1,777	945
U.S.	226	443	515	195	2,042	1,125	790	887	748	597	757	600
Others/Unspecified	350	744	2,135	1,955	1,469	889	278	911	632	837	1,020	345
<b>WORLD TOTAL</b>	<b>17,703</b>	<b>19,813</b>	<b>19,019</b>	<b>16,695</b>	<b>18,692</b>	<b>15,552</b>	<b>13,188</b>	<b>17,896</b>	<b>12,776</b>	<b>17,439</b>	<b>16,878</b>	<b>16,970</b>

E - Estimate

<sup>1</sup> Excludes products.

<sup>2</sup> EU-12 from 1989-90 to 1990-91; EU-15 from 1991-92 to date.

<sup>3</sup> Includes intra-trade from 1990-91.

## BARLEY CARRYOVER STOCKS IN THE MAJOR EXPORTING COUNTRIES

Local Marketing Years 1989-90 to 1999-2000

Crop Year	Australia	Canada	EU <sup>1</sup>	United States	Others	Total
- thousand tonnes -						
1989-90	326	2 056	7 523	3 501	13 324	26 730
1990-91	55	2 646	8 926	2 948	15 241	29 816
1991-92	822	2 614	12 884	2 800	14 544	33 664
1992-93	1 032	3 266	12 105	3 292	13 260	32 955
1993-94	518	3 376	10 471	3 023	15 498	32 886
1994-95	211	1 820	6 916	2 451	16 662	28 060
1995-96	354	1 740	5 455	2 168	9 636	19 353
1996-97	363	2 919	6 373	2 383	11 569	23 607
1997-98	835	2 459	12 671	2 596	13 454	32 015
1998-99 <sup>2</sup>	315	2 687	14 634	3 084	8 279	28 999
<b>10-Year Average</b>	<b>483</b>	<b>2 558</b>	<b>9 796</b>	<b>2 825</b>	<b>13 147</b>	<b>28 809</b>
1999-2000 <sup>3</sup>	315	2 800	12 343	2 645	6 019	24 122

<sup>1</sup> Adjusted to EU-15 for 1989-90 to 1993-94.

<sup>2</sup> Preliminary: Subject to revision.

<sup>3</sup> Forecast.

Sources: Canada - Statistics Canada  
 - Agriculture & Agri-Food Canada  
 All other countries/total - United States Department of Agriculture

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# WORLD OILSEED PRODUCTION, TRADE, UTILIZATION AND STOCKS

1965-66 to 1999-2000<sup>1</sup>

	Harvested Area - min ha -	Yield - t/ha -	Production	Trade <sup>2</sup> million tonnes	Utilization	Ending Stocks <sup>3</sup> million tonnes	Stocks as % of Utilization (%)
1965-66	32.9	1.25	41.3	10.2	41.3	2.1	5.1
1966-67	35.1	1.29	45.3	10.1	44.4	3.7	8.3
1967-68	37.1	1.29	47.8	10.3	46.1	6.2	13.4
1968-69	36.9	1.39	51.3	10.9	48.6	10.1	20.8
1969-70	70.7	1.04	73.4	15.3	75.8	7.8	10.3
1970-71	71.7	1.07	77.1	16.1	80.2	4.7	5.9
1971-72	75.6	1.10	83.3	16.5	84.4	4.7	5.6
1972-73	105.0	1.04	109.4	20.4	109.6	4.7	4.3
1973-74	110.3	1.15	127.0	22.2	122.6	8.3	6.8
1974-75	109.8	1.10	120.2	19.8	119.7	9.5	7.9
10 Yr. avg.	68.5	1.17	77.6	15.2	77.3	6.2	8.0
1975-76	109.2	1.19	130.2	23.9	127.6	13.0	10.2
1976-77	107.3	1.13	120.8	23.7	127.0	7.2	5.7
1977-78	118.0	1.19	140.3	27.0	138.9	9.7	7.0
1978-79	122.9	1.20	147.5	30.2	147.8	10.6	7.2
1979-80	130.2	1.28	166.9	35.3	158.6	18.1	11.4
1980-81	127.8	1.20	152.8	30.8	157.7	14.8	9.4
1981-82	131.1	1.27	167.1	35.6	169.0	12.9	7.6
1982-83	132.2	1.33	175.6	34.7	173.2	15.0	8.7
1983-84	132.5	1.23	163.0	32.6	167.4	10.0	6.0
1984-85	140.3	1.35	188.9	32.1	183.9	15.6	8.5
10 Yr. avg.	125.1	1.24	155.3	30.6	155.1	12.7	8.2
1985-86	139.2	1.39	193.8	33.9	189.4	21.3	11.2
1986-87	135.7	1.41	191.7	36.9	195.8	18.4	9.4
1987-88	143.2	1.45	207.1	39.3	206.9	16.2	7.8
1988-89	153.0	1.32	201.6	31.9	204.7	13.9	6.8
1989-90	153.5	1.38	212.2	36.4	211.0	14.4	6.8
1990-91	152.8	1.41	215.5	32.7	216.3	16.0	7.4
1991-92	164.0	1.37	224.3	37.6	226.5	14.9	6.6
1992-93	163.4	1.39	227.8	38.3	228.2	14.8	6.5
1993-94	166.5	1.37	228.3	38.5	231.9	12.1	5.2
1994-95	169.8	1.54	261.9	44.2	257.5	16.4	6.4
10 Yr. avg.	154.1	1.40	216.4	37.0	216.8	15.8	7.3
1995-96	176.3	1.47	258.4	44.4	261.8	13.3	5.1
1996-97	172.4	1.52	262.0	49.6	264.7	10.6	4.0
1997-98	179.3	1.60	287.0	54.4	282.6	12.2	4.3
1998-99 <sup>4</sup>	185.8	1.57	292.7	54.5	288.5	16.5	5.7
1999-2000 <sup>5</sup>	189.4	1.56	295.6	56.6	294.4	18.2	6.2

<sup>1</sup> Major producers, exporters and importers. Oilseeds include: soybeans, cottonseed, peanut, sunflowerseed, rapeseed, copra and palm kernel. Flaxseed is no longer included.

<sup>2</sup> World imports and exports will not balance. This is due to differences in marketing years and time lags between exportation and importation. Trade data is basis exports.

<sup>3</sup> Summation of stocks at end of the local marketing years.

<sup>4</sup> Preliminary

<sup>5</sup> Forecast

## WORLD OILSEED PRODUCTION

1989-90 to 1999-2000<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99	10-yr avg	1989-2000 <sup>2</sup>
<b>IMPORTING AREAS</b>												
Western Europe <sup>2</sup>	65	55	64	59	63	49	59	62	69	66	61	66
Other W. Europe	65	55	64	59	63	49	59	62	69	66	61	66
Eastern Europe	5,128	4,239	4,429	4,030	3,743	4,103	5,318	4,685	4,248	5,251	4,817	6,506
Bulgaria	494	397	461	604	462	608	669	504	514	510	522	609
Hungary	902	808	964	841	751	718	785	966	723	831	829	1,225
Poland	1,586	1,206	1,043	758	594	786	1,377	449	595	1,099	946	1,200
Romania	978	708	800	745	792	860	1,042	1,297	991	1,182	940	1,412
Former Yugoslavia	694	643	568	576	599	520	517	661	562	689	603	707
Others	474	477	593	506	545	641	928	806	863	940	678	1,353
Former USSR	13,492	12,605	11,076	10,315	9,588	8,891	11,281	8,547	9,013	9,018	10,363	10,925
Russia	4,796	4,402	3,700	3,743	3,358	3,096	4,615	3,154	3,182	3,400	3,745	4,440
Ukraine	3,079	2,904	2,684	2,423	2,351	1,620	2,897	2,156	2,370	2,353	2,482	2,850
Uzbekistan	3,183	2,926	2,600	2,400	2,200	2,400	2,200	2,014	2,300	2,000	2,422	2,300
Others	2,434	2,373	2,112	1,749	1,679	1,575	1,569	1,223	1,161	1,265	1,714	1,335
Africa	8,233	8,100	7,605	8,142	8,043	8,444	9,768	9,651	9,705	10,142	8,783	9,692
Egypt	676	743	693	755	943	691	689	846	703	597	734	598
Nigeria	702	657	765	821	798	874	973	1,004	1,059	1,015	867	1,040
Senegal	839	731	795	616	652	746	853	681	541	566	702	638
South Africa	970	927	398	627	707	659	1,118	772	941	1,525	864	960
Sudan	672	516	590	540	499	591	619	600	580	498	571	562
Others	4,374	4,526	4,364	4,783	4,444	4,883	5,516	5,748	5,881	5,941	5,046	5,894
Middle East	3,069	2,901	2,553	2,984	2,630	2,867	3,260	3,075	3,255	3,350	2,974	3,263
Syria	308	329	405	528	527	432	495	572	734	722	505	663
Turkey	2,282	2,076	1,685	2,018	1,657	1,877	2,179	1,870	1,967	2,065	1,948	2,125
Others	479	496	463	438	446	558	586	633	554	563	522	475
Asia-Pacific	63,381	68,209	72,158	72,039	77,274	82,992	86,330	87,771	85,490	86,452	78,310	87,435
China	28,531	33,330	34,526	33,038	36,610	42,248	43,327	41,445	43,410	44,216	38,268	44,300
India	19,413	20,518	21,059	23,105	23,260	23,917	25,518	27,936	24,943	25,668	23,534	24,740
Indonesia	4,111	4,236	4,691	4,669	4,931	5,232	5,449	5,972	5,087	5,307	4,967	5,637
Malaysia	2,070	1,868	1,904	2,214	2,254	2,403	2,521	2,678	2,523	2,899	2,333	3,039
Pakistan	3,251	3,648	4,767	3,489	3,166	3,152	4,031	3,671	3,660	3,299	3,613	3,994
Philippines	2,373	2,073	2,019	2,311	2,004	2,722	2,036	2,465	2,436	1,618	2,206	2,218
Thailand	1,001	866	785	804	758	752	724	701	705	696	779	703
Others	2,631	2,670	2,407	2,409	2,291	2,566	2,724	2,903	2,746	2,749	2,610	2,804
Latin America <sup>3</sup>	26,760	21,800	25,258	27,808	30,314	32,456	30,556	33,660	39,397	37,655	30,568	37,725
Bolivia	248	418	343	546	775	856	944	1,081	1,121	660	699	978
Brazil	21,666	17,104	20,677	23,404	25,664	27,071	25,032	28,008	33,411	32,027	25,406	31,935
Mexico	1,583	1,169	1,411	962	883	983	913	757	870	822	1,035	672
Paraguay	1,983	1,770	1,595	2,024	2,066	2,474	2,683	2,915	3,204	3,231	2,395	3,221
Others	1,260	1,339	1,232	872	926	1,075	984	908	791	915	1,032	919
Others/Unspecified	355	426	440	432	256	435	386	383	396	392	391	464
Sub-Total	120,483	119,335	123,583	125,809	131,911	139,840	146,958	147,853	151,573	152,326	135,967	156,076
<b>MAJOR EXPORTERS</b>												
Argentina	15,225	16,501	15,601	14,933	16,944	19,240	19,236	17,460	26,173	27,390	18,870	25,950
Australia	740	1,028	1,080	841	1,026	972	1,354	1,772	2,031	3,007	1,385	3,414
Canada <sup>3</sup>	4,428	4,528	5,684	5,327	7,470	9,487	8,732	7,232	9,131	10,380	7,240	11,564
EU-15 <sup>4</sup>	12,062	13,588	14,024	12,425	11,501	12,687	13,137	12,951	14,970	15,198	13,254	16,497
U.S.	59,257	60,550	64,316	68,442	59,463	79,671	69,026	74,755	83,095	84,365	70,294	82,100
Sub-Total	91,712	96,195	100,705	101,968	96,404	122,057	111,485	114,170	135,400	140,340	111,044	139,525
<b>WORLD TOTAL</b>	<b>212,195</b>	<b>215,530</b>	<b>224,288</b>	<b>227,777</b>	<b>228,315</b>	<b>261,897</b>	<b>258,443</b>	<b>262,023</b>	<b>286,973</b>	<b>292,666</b>	<b>247,011</b>	<b>295,601</b>

P - Preliminary

<sup>1</sup> Oilseeds include: soybeans, cottonseed, peanut, sunflowerseed, rapeseed, copra and palm kernel. Flaxseed is no longer included.

<sup>2</sup> Production included under major exporters for EU-15 and Argentina.

<sup>3</sup> Production for oilseeds excluding flaxseed.

<sup>4</sup> 1989-90 to 1993-94 adjusted to EU-15.

## WORLD OILSEED EXPORTS BY MAJOR EXPORTER

Local marketing Years 1989 to 1999<sup>1</sup>

Crop Year	Argentina	Brazil	Canada <sup>2</sup>	China	EU <sup>3</sup>	Paraguay	United States	Others	Total
- thousand tonnes -									
1989-90	3,942	4,223	2,231	1,489	3,109	1,640	17,525	2,265	36,424
	10.8%	11.6%	6.1%	4.1%	8.5%	4.5%	48.1%	6.2%	100.0%
1990-91	4,849	1,647	2,101	1,785	3,568	1,040	15,640	2,041	32,671
	14.8%	5.0%	6.4%	5.5%	10.9%	3.2%	47.9%	6.2%	100.0%
1991-92	3,330	3,829	2,146	1,451	3,873	845	19,400	2,705	37,579
	8.9%	10.2%	5.7%	3.9%	10.3%	2.2%	51.6%	7.2%	100.0%
1992-93	2,584	4,186	2,087	662	3,201	1,265	21,742	2,561	38,288
	6.7%	10.9%	5.5%	1.7%	8.4%	3.3%	56.8%	6.7%	100.0%
1993-94	3,657	5,398	3,840	1,702	3,005	1,215	16,524	3,200	38,541
	9.5%	14.0%	10.0%	4.4%	7.8%	3.2%	42.9%	8.3%	100.0%
1994-95	3,608	3,495	4,454	913	3,031	1,465	23,865	3,362	44,193
	8.2%	7.9%	10.1%	2.1%	6.9%	3.3%	54.0%	7.6%	100.0%
1995-96	2,864	3,636	3,403	622	3,073	1,615	23,872	5,332	44,417
	6.4%	8.2%	7.7%	1.4%	6.9%	3.6%	53.7%	12.0%	100.0%
1996-97	1,000	8,343	2,997	643	4,113	2,165	24,745	5,593	49,599
	2.0%	16.8%	6.0%	1.3%	8.3%	4.4%	49.9%	11.3%	100.0%
1997-98	4,009	9,328	3,733	353	4,818	2,415	24,520	5,196	54,372
	7.4%	17.2%	6.9%	0.8%	8.9%	4.4%	45.1%	9.6%	100.0%
1998-99 <sup>4</sup>	4,325	8,703	4,768	535	5,280	2,425	22,632	5,849	54,517
	7.9%	16.0%	8.7%	1.0%	9.7%	4.4%	41.5%	10.7%	100.0%
10-Year Average	3,417	5,279	3,176	1,016	3,707	1,609	21,047	3,810	43,060
	7.9%	12.3%	7.4%	2.4%	8.6%	3.7%	48.9%	8.8%	100.0%
1999-2000 <sup>5</sup>	3,955	8,703	5,000	470	5,689	2,425	24,438	5,901	56,581
	7.0%	15.4%	8.8%	0.8%	10.1%	4.3%	43.2%	10.4%	100.0%

<sup>1</sup> Oilseeds included: soybeans, cottonseed, peanut, sunflowerseed, rapeseed, copra and palm kernel.

Flaxseed is no longer included.

<sup>2</sup> Canola and soybean exports only.

<sup>3</sup> Adjusted to EU-15 for 1989-90 to 1993-94 inclusive, includes intra-trade.

<sup>4</sup> Preliminary.

<sup>5</sup> Forecast.

Source: Canada - Statistics Canada

- Agriculture & Agri-Food Canada

All other countries/total - United States Department of Agriculture

Feb-2000

## WORLD OILSEED IMPORTERS

1989-90 to 1999-2000<sup>1</sup>

	1989-90	1990-91	1991-92	1992-93	1993-94	1994-95	1995-96	1996-97	1997-98	1998-99P	10-yr avg	1999-2000E
<b>Western Europe</b>	<b>18,550</b>	<b>17,821</b>	<b>19,376</b>	<b>19,469</b>	<b>18,911</b>	<b>22,627</b>	<b>21,125</b>	<b>22,180</b>	<b>23,146</b>	<b>23,221</b>	<b>20,643</b>	<b>23,051</b>
EU-15 <sup>2,3</sup>	18,096	17,458	19,027	19,317	18,592	22,193	20,713	21,771	22,751	22,730	20,265	22,560
Other W. Europe	454	363	349	152	319	434	412	409	395	491	378	491
<b>Eastern Europe</b>	<b>924</b>	<b>611</b>	<b>449</b>	<b>386</b>	<b>324</b>	<b>378</b>	<b>287</b>	<b>658</b>	<b>465</b>	<b>207</b>	<b>469</b>	<b>163</b>
Hungary	21	21	31	11	33	83	45	38	44	67	39	39
Poland	3	5	50	92	86	58	11	443	134	38	92	38
Romania	487	220	155	120	120	114	70	90	150	16	154	-
Former Yugoslavia	276	203	137	96	43	42	66	21	61	1	95	1
Others	137	162	76	67	42	81	95	66	76	85	89	85
<b>Former USSR<sup>2</sup></b>	<b>1,075</b>	<b>813</b>	<b>500</b>	<b>564</b>	<b>401</b>	<b>449</b>	<b>540</b>	<b>434</b>	<b>378</b>	<b>567</b>	<b>572</b>	<b>534</b>
Russia	256	235	130	270	108	72	71	55	61	250	151	250
Ukraine	200	180	180	60	30	20	40	35	35	23	80	23
Uzbekistan	250	50	20	100	200	250	330	240	175	160	178	160
Others	369	348	170	134	63	107	99	104	107	134	164	101
<b>Africa</b>	<b>150</b>	<b>150</b>	<b>526</b>	<b>429</b>	<b>347</b>	<b>540</b>	<b>392</b>	<b>459</b>	<b>560</b>	<b>645</b>	<b>420</b>	<b>865</b>
Egypt	67	43	-	65	75	120	103	130	175	170	95	410
Morocco	13	29	51	45	47	112	79	141	230	335	108	275
South Africa	3	17	255	246	174	250	155	126	92	65	138	100
Others	67	61	220	73	51	58	55	62	63	75	79	80
<b>Middle East</b>	<b>448</b>	<b>569</b>	<b>645</b>	<b>868</b>	<b>764</b>	<b>1,371</b>	<b>1,276</b>	<b>1,311</b>	<b>1,708</b>	<b>1,741</b>	<b>1,070</b>	<b>1,791</b>
Israel	358	471	429	547	452	490	452	537	535	550	482	535
Turkey	7	35	133	238	224	787	728	655	1,001	1,030	484	1,090
Others	83	63	83	83	88	94	96	119	172	161	104	166
<b>Asia-Pacific</b>	<b>11,841</b>	<b>11,563</b>	<b>12,575</b>	<b>12,759</b>	<b>13,058</b>	<b>13,688</b>	<b>14,854</b>	<b>16,855</b>	<b>17,139</b>	<b>20,089</b>	<b>14,442</b>	<b>22,106</b>
China	2	17	142	159	130	401	798	2,283	3,247	6,025	1,320	7,145
Indonesia	597	661	571	681	925	839	951	939	898	1,017	808	1,350
Japan	6,887	6,601	6,952	7,049	7,036	6,999	7,082	7,360	7,326	7,104	7,040	7,179
Malaysia	459	593	523	552	530	660	690	760	514	487	577	636
Philippines	59	101	92	95	177	128	219	225	191	325	161	455
South Korea	1,144	1,022	1,424	1,230	1,273	1,496	1,541	1,601	1,439	1,505	1,368	1,555
Taiwan	2,334	2,215	2,461	2,513	2,508	2,605	2,653	2,639	2,394	2,157	2,448	2,207
Thailand	-	-	57	123	124	115	426	550	600	750	275	750
Others	359	353	353	357	355	445	494	498	530	719	446	829
<b>Latin America</b>	<b>2,118</b>	<b>2,858</b>	<b>3,993</b>	<b>3,475</b>	<b>4,765</b>	<b>4,319</b>	<b>5,316</b>	<b>6,541</b>	<b>7,109</b>	<b>6,886</b>	<b>4,738</b>	<b>7,366</b>
Brazil	10	360	440	10	910	910	1,310	1,460	510	710	663	910
Mexico	1,392	1,915	2,799	2,654	2,957	2,595	3,172	3,565	4,356	4,807	3,001	4,773
Paraguay	350	100	104	106	113	-	-	-	-	-	77	-
Venezuela	32	115	164	140	168	285	204	300	360	360	213	370
Others	334	368	486	565	617	529	630	1,216	1,883	1,209	784	1,313
<b>Others &amp; Unspecified</b>	<b>648</b>	<b>579</b>	<b>450</b>	<b>642</b>	<b>828</b>	<b>844</b>	<b>827</b>	<b>1,123</b>	<b>1,157</b>	<b>1,285</b>	<b>838</b>	<b>1,204</b>
Canada <sup>4</sup>	294	183	114	338	80	109	167	335	290	411	232	550
USA	195	214	174	116	551	510	466	594	670	684	417	602
Others/unspecified	159	182	162	188	197	225	194	194	197	190	189	52
<b>TOTAL</b>	<b>35,754</b>	<b>34,964</b>	<b>38,514</b>	<b>38,592</b>	<b>39,398</b>	<b>44,216</b>	<b>44,617</b>	<b>49,561</b>	<b>51,662</b>	<b>54,641</b>	<b>43,192</b>	<b>57,080</b>

P - Preliminary

F - Forecast

<sup>1</sup> Oilseeds include: soybeans, cottonseed, peanut, sunflowerseed, rapeseed, copra and palm kernel. Flaxseed is no longer included.

<sup>2</sup> Includes intra-trade.

<sup>3</sup> 1989-90 to 1993-94 adjusted to EU-15.

<sup>4</sup> Imports of canola and soybeans only on August-July basis; excludes products

Sources: Canada - Statistics Canada

- Agriculture & Agri-Food Canada

All other countries/total - United States Department of Agriculture

## OILSEED CARRYOVER STOCKS IN THE MAJOR EXPORTING COUNTRIES

Local Marketing Years 1989-90 to 1999-2000

Crop Year	Argentina	Brazil	Canada <sup>1</sup>	EU <sup>2</sup>	United States	Others	Total
- thousand tonnes -							
1989-90	1 229	805	940	1 163	7 194	3 091	14 422
1990-91	588	1 003	609	1 040	9 959	2 795	15 994
1991-92	401	838	924	1 166	8 742	2 858	14 929
1992-93	347	837	806	1 112	8 972	2 732	14 806
1993-94	465	656	424	1 170	6 678	2 664	12 057
1994-95	521	715	757	1 595	10 273	2 579	16 440
1995-96	419	830	1 194	1 586	6 051	3 205	13 285
1996-97	579	480	643	1 443	4 654	2 768	10 567
1997-98	778	585	551	1 426	6 445	2 420	12 205
1998-99 <sup>3</sup>	513	480	861	1 548	10 780	2 272	16 454
<b>10-Year Average</b>	<b>628</b>	<b>750</b>	<b>813</b>	<b>1 299</b>	<b>7 499</b>	<b>2 868</b>	<b>13 857</b>
<b>1999-2000 <sup>4</sup></b>	<b>443</b>	<b>490</b>	<b>2 025</b>	<b>1 818</b>	<b>11 208</b>	<b>2 183</b>	<b>18 167</b>

<sup>1</sup> Canola and soybeans.

<sup>2</sup> Adjusted to EU-15 for 1989-90 to 1993-94.

<sup>3</sup> Preliminary: Subject to revision.

<sup>4</sup> Forecast.

Sources: Canada - Statistics Canada

- Agriculture & Agri-Food Canada

All other countries/total - United States Department of Agriculture

Feb-2000

WORLD WHEAT FOB PRICES<sup>1</sup>  
1980-81 to 1999-2000

Yearly Avg	Canada		1CWR\$ 13.5%		1CWR\$ 12.5%		DWS 14.0 %		United States		SRW Gulf	ASW	Australia	Argentina	EU
	St. Lawrence	West Coast	1CWR\$	West Coast	1CWR\$	West Coast	WW	FWH	WW	HW(Ord) Gulf	WW -US \$/Tonne-				
1960-61	223.00	230.00	n/a	n/a	210.00	210.00	167.00	182.00	175.00	181.00	204.00	170.00			
1961-62	196.00	201.00	n/a	n/a	184.00	184.00	158.00	171.00	148.00	165.00	178.00	150.00			
1962-63	185.00	190.00	n/a	n/a	174.00	174.00	165.00	159.00	131.00	164.00	148.00	132.00			
1963-64	190.00	193.00	n/a	n/a	178.00	178.00	148.00	154.00	142.00	154.00	137.00	146.00			
1964-65	177.00	188.00	n/a	n/a	170.00	170.00	141.00	148.00	139.00	150.00	125.00	131.00			
1965-66	182.00	180.00	n/a	n/a	161.00	161.00	134.00	128.00	125.00	133.00	102.00	111.00			
1966-67	138.00	148.00	n/a	n/a	126.00	126.00	108.00	110.00	113.00	110.00	84.00	83.00			
1967-68	145.00	164.00	n/a	n/a	138.00	138.00	119.00	124.00	120.00	125.00	101.00	84.00			
1968-69	209.00	225.00	n/a	n/a	185.00	185.00	168.00	167.00	161.00	172.00	151.00	147.00			
1969-70	188.00	194.00	n/a	n/a	165.00	165.00	158.00	162.00	153.00	168.00	139.00	142.00			
1970-71	137.00	161.00	n/a	n/a	132.00	132.00	117.00	118.00	113.00	127.00	87.00	90.00			
1971-72	170.00	188.00	n/a	n/a	161.00	161.00	154.00	150.00	147.00	160.00	118.00	119.00			
1972-73	175.00	193.00	n/a	n/a	165.00	165.00	150.00	143.00	142.00	156.00	124.00	133.00			
1973-74	212.00	235.44	n/a	n/a	209.00	209.00	193.00	198.00	193.00	194.00	154.00	168.00	96.00		
1974-75	188.00	n/q	193.00	n/q	178.00	178.00	159.00	157.00	147.00	175.00	133.00	135.00			
1975-76	243.00	n/q	201.16	n/q	233.00	233.00	196.00	215.00	196.00	231.00	216.00	209.00			
1976-77	197.21	n/q	216.65	n/q	191.90	191.90	165.41	177.96	159.15	205.32	166.99	165.09			
1977-78	172.94	n/q	197.87	n/q	172.37	172.37	138.28	142.75	131.02	168.10	137.68	132.47			
1978-79	158.21	165.51	179.43	n/q	155.52	155.52	115.54	120.81	102.03	148.68	117.52	98.25			
1979-2000 <sup>z</sup>	150.01	179.03	n/a	n/a	148.20	120.19	111.31	98.55	138.07	110.72	95.89				
<b>1980-81</b>															
July	160.66	n/q	181.96	n/q	157.33	104.90	120.50	100.39	143.68	117.41				98.27	
August	153.22	n/q	175.45	n/q	147.01	147.01	102.26	112.65	95.07	136.31	109.52	93.65			
September	150.64	n/q	171.69	n/q	147.14	147.14	102.59	105.48	100.34	142.00	110.65	97.87			
October	161.96	n/q	188.70	n/q	161.90	118.30	131.18	112.00	155.86	130.86	130.86	108.92			
November	167.49	n/q	194.67	n/q	164.67	118.87	118.87	132.74	112.59	158.14	125.52	110.87			
December	169.00	n/q	190.43	n/q	160.92	117.51	128.87	106.32	157.24	116.00	105.80				
January 1999	168.60	n/q	188.69	n/q	161.55	119.49	127.38	105.40	156.78	112.05	101.55				
February	160.81	183.54	181.54	n/q	154.37	117.54	118.96	97.49	150.18	104.60	90.65				
March	156.72	185.07	180.44	n/q	156.31	121.03	119.72	102.56	152.57	112.22	92.26				
April	149.04	180.70	178.64	n/q	150.45	121.38	115.71	100.25	146.45	120.50	93.32				
May	147.59	n/q	182.13	n/q	150.17	121.55	113.03	97.75	141.25	123.20	92.23				
June	152.74	n/q	185.51	n/q	154.45	121.11	113.26	94.21	143.67	127.86	93.55				
Average	158.21		185.51	*	179.43	*	155.52	115.54	102.03	148.68	117.52	98.25			
<b>1980-81</b>															
July	148.11	n/q	178.89	n/q	148.79	117.96	105.49	89.50	136.57	125.86	90.05				
August	149.01	n/q	184.48	n/q	151.08	125.55	112.00	97.29	140.59	128.41	97.77				
September	151.62	n/q	182.26	n/q	149.52	128.20	118.62	106.06	144.40	130.33	104.03				
October	148.77	n/q	179.51	n/q	126.03	111.57	101.63	139.20	113.15	100.30					
November	151.00	n/q	180.44	n/q	149.97	121.52	110.62	98.87	137.95	96.50	94.79				
December	148.25	n/q	173.41	n/q	144.02	110.90	107.67	93.61	132.53	90.26	88.80				
January 2000	152.10	n/q	176.32	n/q	145.36	115.23	111.10	99.52	135.79	100.38	94.28				
February 1-18	151.18	n/q	176.94	n/q	145.32	116.11	113.37	101.88	137.50	101.88	97.07				
Average	150.01		179.03	*	n/q	120.19	102.03	98.55	138.07	110.72	95.89				

<sup>1</sup>n/q = not quoted

<sup>1</sup> next to nearest month quote for US, Australian, Argentine and EU prices

<sup>2</sup> July-February average

<sup>3</sup> 8-month average

Feb-2000

**U.S. DURUM AND SPRING WHEAT PRICES<sup>1</sup>****1980-81 to 1999-2000**

	<b>3 HAD</b> <b>Duluth-Superior</b>	<b>DNS 14.0 %</b> <b>Duluth-Superior</b>
<b>Yearly Avg.</b>	<b>--US \$/Tonne--</b>	
1980-81	221.36	176.36
1981-82	157.73	158.85
1982-83	153.64	152.26
1983-84	170.89	157.94
1984-85	160.19	148.94
1985-86	143.05	141.25
1986-87	126.83	112.08
1987-88	143.65	121.27
1988-89	173.98	161.25
1989-90	150.55	150.03
1990-91	121.73	110.07
1991-92	133.62	143.77
1992-93	136.79	142.89
1993-94	196.21	174.70
1994-95	192.70	152.82
1995-96	220.30	208.59
1996-97	181.16	162.18
1997-98	201.46	148.25
1998-99	138.29	134.41
1999-2000 <sup>2</sup>	139.90	128.29
 <b>1998-99</b>		
August	145.32	127.06
September	129.57	128.14
October	144.88	140.51
November	144.44	146.26
December	143.76	144.58
January 1999	138.80	143.02
February	129.98	135.99
March	133.48	133.97
April	132.46	128.18
May	135.49	126.32
June	139.54	131.47
July	141.81	127.36
<b>Average</b>	<b>138.29</b>	<b>134.41</b>
 <b>1999-2000</b>		
August	138.12	127.68
September	137.18	129.44
October	136.50	126.99
November	141.55	129.68
December	143.87	127.76
January 2000	141.64	129.12
February 1-18	140.41	127.35
<b>Average</b>	<b>139.90</b>	<b>128.29</b>

<sup>1</sup> next to nearby month quote<sup>2</sup> July - February average

## COARSE GRAIN PRICES<sup>1</sup>

1980-81 to 1999-2000

	USA		EU
	Corn Gulf	Barley PNW	Barley UK
<b>Yearly Avg.</b>	<b>--US \$/Tonne--</b>		
1980-81	147.40	162.15	n/a
1981-82	120.08	133.35	n/a
1982-83	115.63	116.19	104.12 <sup>2</sup>
1983-84	147.41	135.52	136.04
1984-85	124.64	117.27	110.46
1985-86	105.76	98.71	82.90
1986-87	75.01	93.01	61.28
1987-88	87.09	101.37	70.71
1988-89	119.90	128.82	127.37
1989-90	111.07	122.39	120.59 <sup>3</sup>
1990-91	106.55	116.47	88.03
1991-92	110.51	118.31	91.59
1992-93	97.63	115.95	101.46
1993-94	113.78	107.76	66.96
1994-95	105.56	116.95	91.83
1995-96	108.74	114.38	95.77
1996-97	135.29	137.12	141.90
1997-98	115.19	123.62	119.77
1998-99	95.42	95.87	77.18
1999-2000 <sup>4</sup>	89.49	103.24	95.24
<b>1998-99</b>			
July	101.70	100.34	68.45
August	89.62	93.90	69.24
September	88.68	79.77	62.86
October	96.58	91.31	72.72
November	98.58	96.17	77.34
December	96.93	100.39	78.11
January 1999	98.87	100.41	86.80
February	94.82	100.77	82.70
March	97.00	99.81	83.56
April	94.37	96.06	78.38
May	93.98	95.07	82.83
June	<u>93.96</u>	<u>96.45</u>	<u>83.20</u>
<b>Average</b>	<b>95.42</b>	<b>95.87</b>	<b>77.18</b>
<b>1999-2000</b>			
July	84.95	98.03	82.36
August	89.24	102.76	85.48
September	89.68	105.27	98.93
October	87.05	105.18	99.11
November	86.94	101.76	97.88
December	88.32	101.40	97.46
January 2000	94.38	104.81	101.22
February 1-18	<u>95.35</u>	<u>106.69</u>	<u>99.50</u>
<b>Average</b>	<b>89.49</b>	<b>103.24</b>	<b>95.24</b>

<sup>1</sup> next to nearby month quote

<sup>2</sup> 8-month average

<sup>3</sup> 11-month average

<sup>4</sup> January - February average

**OILSEED, PROTEIN MEAL, AND VEGETABLE OIL PRICES**  
1981-82 to 1998-99 (October /September)<sup>1</sup>

Crop Year	Canola 2	Flax 3	Flaxseed 4	Soybeans 5	Soymeal 6	Canola 7	Soyoil 8	Palmoil 9	Rapeseed 10
1981-82	325.19	352.12	292.00	224.00	202.00	186.00	418.00	n/a	438.00
1982-83	306.99	293.80	303.00	229.00	206.00	170.00	455.00	406.00	436.00
1983-84	455.44	364.13	351.00	274.00	208.00	164.00	673.00	767.00	696.00
1984-85	386.04	351.42	303.00	210.00	138.00	94.00	650.00	569.00	586.00
1985-86	301.40	291.79	239.00	188.00	171.00	118.00	397.00	274.00	338.00
1986-87	239.70	209.83	180.00	183.00	179.00	95.00	339.00	310.00	297.00
1987-88	303.35	247.33	222.00	251.00	245.00	153.00	499.00	402.00	408.00
1988-89	337.40	386.52	219.00	263.00	257.00	167.00	465.00	358.00	409.00
1989-90	303.72	374.10	213.00	214.00	192.00	135.00	491.00	271.00	423.00
1990-91	287.72	230.89	199.00	210.00	187.00	131.00	463.00	318.00	417.00
1991-92	274.85	199.27	205.00	208.00	194.00	139.00	421.00	365.00	416.00
1992-93	321.61	255.63	234.00	216.00	201.00	157.00	472.00	382.00	441.00
1993-94	391.38	262.70	284.00	234.00	199.00	152.00	595.00	445.00	578.00
1994-95	412.18	307.86	289.00	208.00	167.00	134.00	606.00	651.00	637.00
1995-96	433.00	341.56	298.00	273.00	248.00	180.00	545.00	523.00	566.00
1996-97	441.10	363.42	284.00	278.00	286.00	175.00	496.00	526.00	539.00
1997-98	419.92	380.00	296.00	233.00	193.00	139.00	569.00	601.00	637.00
1998-99	374.50	314.27	227.00	177.00	145.00	105.00	438.00	482.00	482.00
1999-2000	293.50	234.53	188.75	167.25	163.75	121.75	344.75	333.75	373.25
<b>1998-99</b>									
Oct	400.10	339.50	277.00	191.00	143.00	105.00	556.00	642.00	614.00
Nov	412.40	357.60	286.00	205.00	153.00	111.00	556.00	650.00	616.00
Dec	416.80	347.70	285.00	201.00	154.00	122.00	529.00	618.00	589.00
<b>Jan-99</b>									
Jan	402.70	344.20	268.00	191.00	144.00	115.00	504.00	600.00	554.00
Feb	369.10	317.50	227.00	176.00	137.00	103.00	441.00	539.00	474.00
Mar	363.60	314.70	217.00	169.00	140.00	116.00	430.00	463.00	444.00
Apr	362.10	306.20	219.00	170.00	142.00	107.00	414.00	470.00	447.00
May	353.20	287.40	198.00	166.00	140.00	96.00	394.00	446.00	430.00
Jun	356.50	279.00	189.00	164.00	145.00	94.00	364.00	354.00	411.00
Jul	317.60	255.50	176.00	150.00	139.00	82.00	337.00	311.00	385.00
Aug	306.30	256.30	189.00	164.00	149.00	95.00	364.00	325.00	401.00
Sep	302.90	253.00	197.00	172.00	158.00	108.00	370.00	365.00	407.00
<b>1999-2000</b>									
Oct	302.60	245.40	195.00	166.00	162.00	119.00	354.00	347.00	391.00
Nov	297.70	239.40	194.00	165.00	163.00	125.00	344.00	332.00	370.00
Dec	287.60	227.10	181.00	164.00	160.00	121.00	338.00	331.00	364.00
Jan	286.09	226.21	185.00	174.00	170.00	122.00	343.00	325.00	368.00

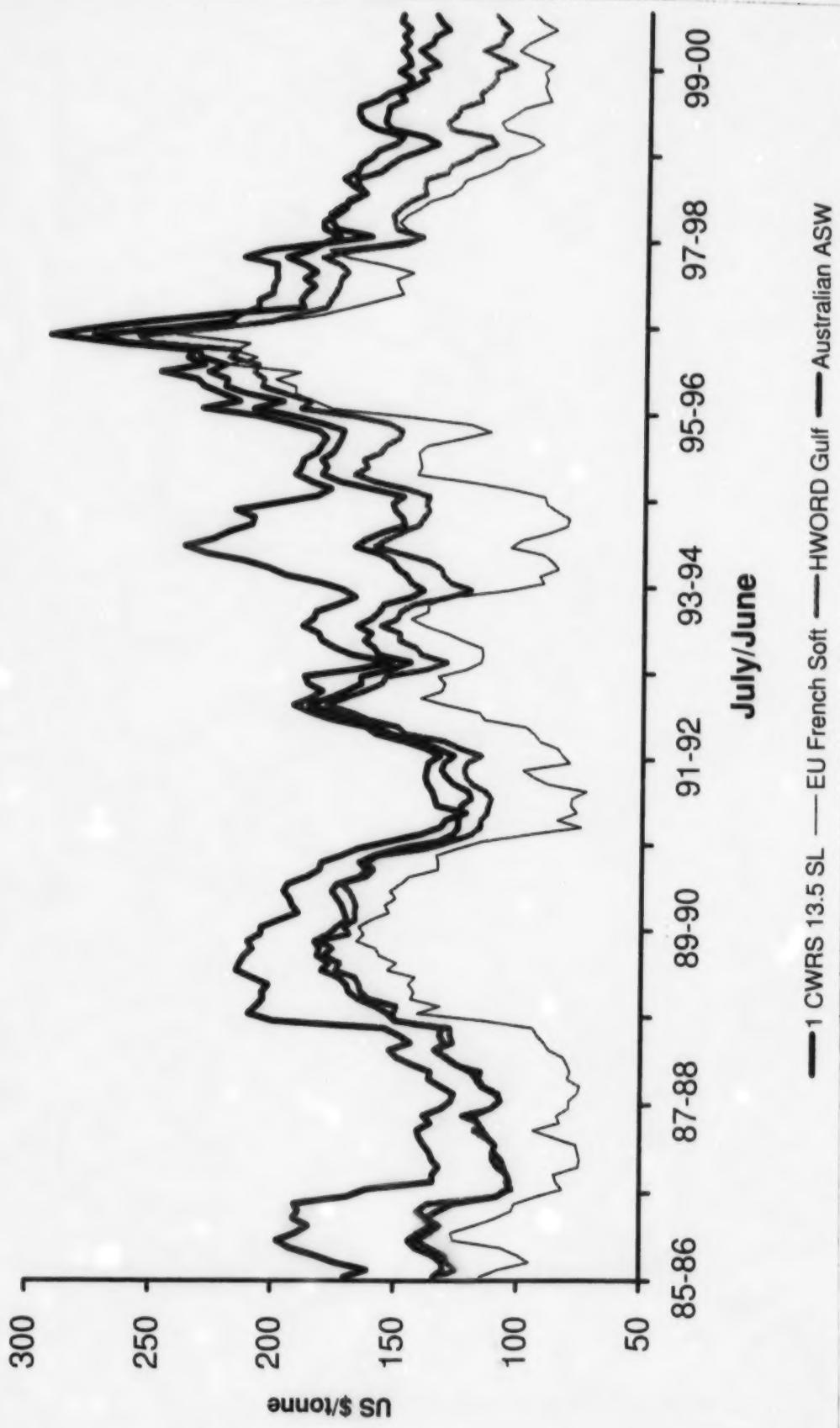
<sup>1</sup> All prices US \$/tonne except Canola and Flax, which are Cdn \$/tonne based on August/July crop year.  
<sup>2</sup> No. 1 cash grain price, Winnipeg, (basis Vancouver), Cdn \$/tonne.  
<sup>3</sup> No. 1 cash grain price, Winnipeg (basis Thunder Bay), Cdn \$/tonne.  
<sup>4</sup> Hamburg CIF, Europe "90" oil, US \$/tonne.  
<sup>5</sup> U.S. No. 1 Yellow cast, Central Illinois, US \$/tonne.  
<sup>6</sup> Decatur, 44% protein avg. wholesale, US \$/tonne.

<sup>7</sup> Hamburg fob - ex mill, 34% protein, US \$/tonne.  
<sup>8</sup> Decatur, average wholesale crude tank, US \$/tonne.  
<sup>9</sup> Malaysia FOB rd, US \$/tonne.

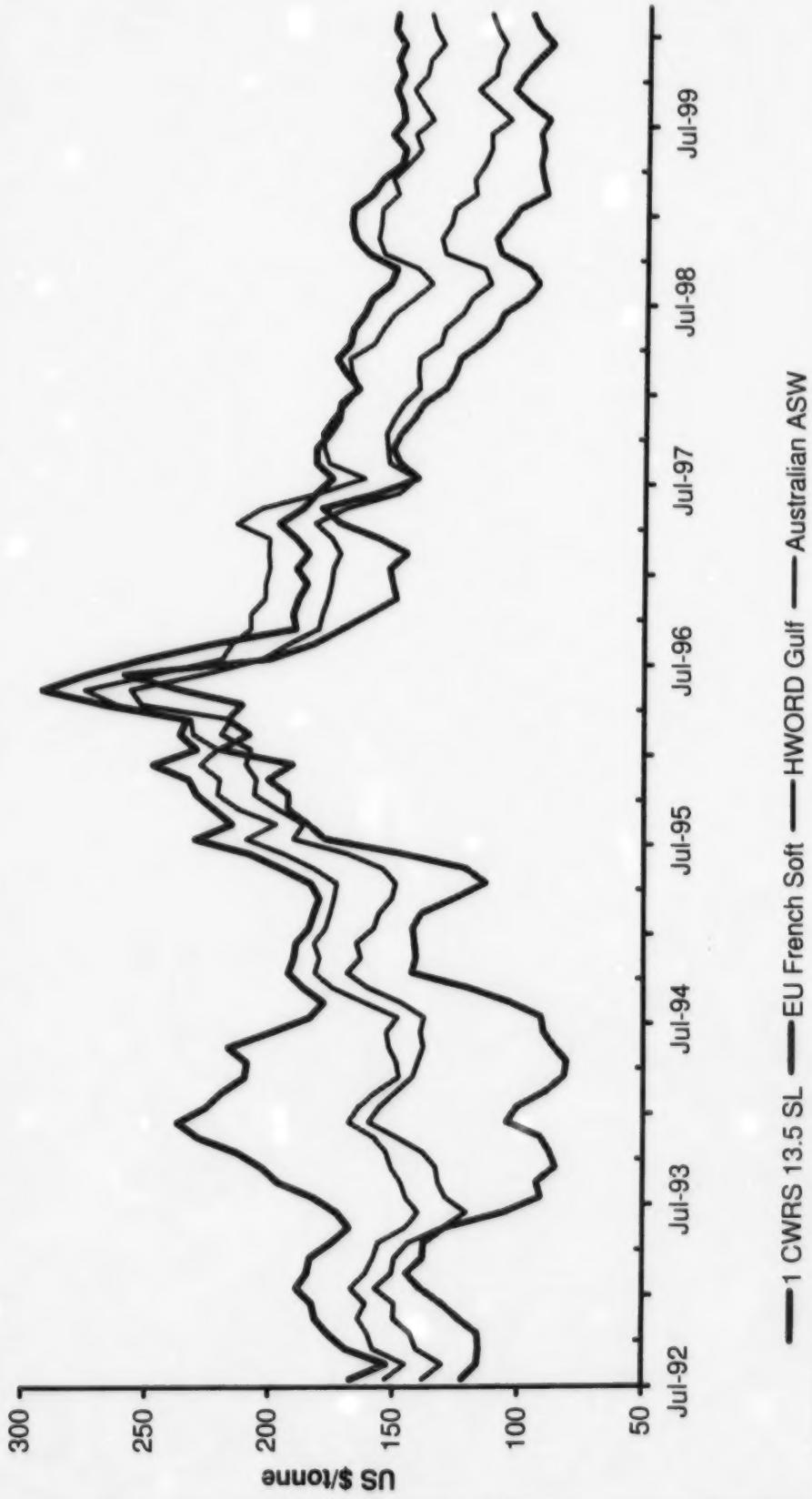
<sup>10</sup> Rotterdam, Dutch FOB ex-mill, US \$/tonne.

<sup>11</sup> 4-month average

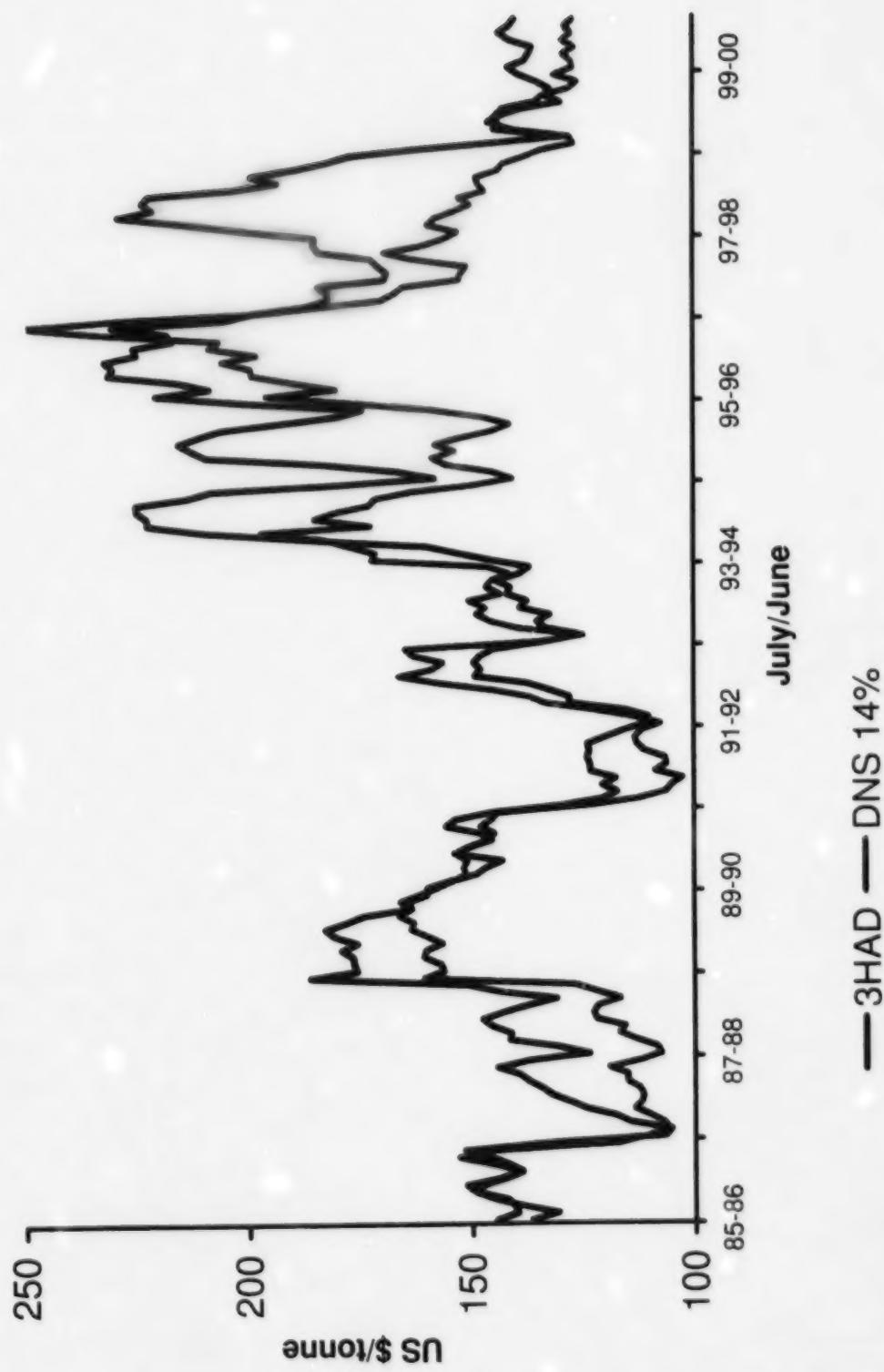
## WORLD WHEAT PRICES 1985-86 to 1999-2000



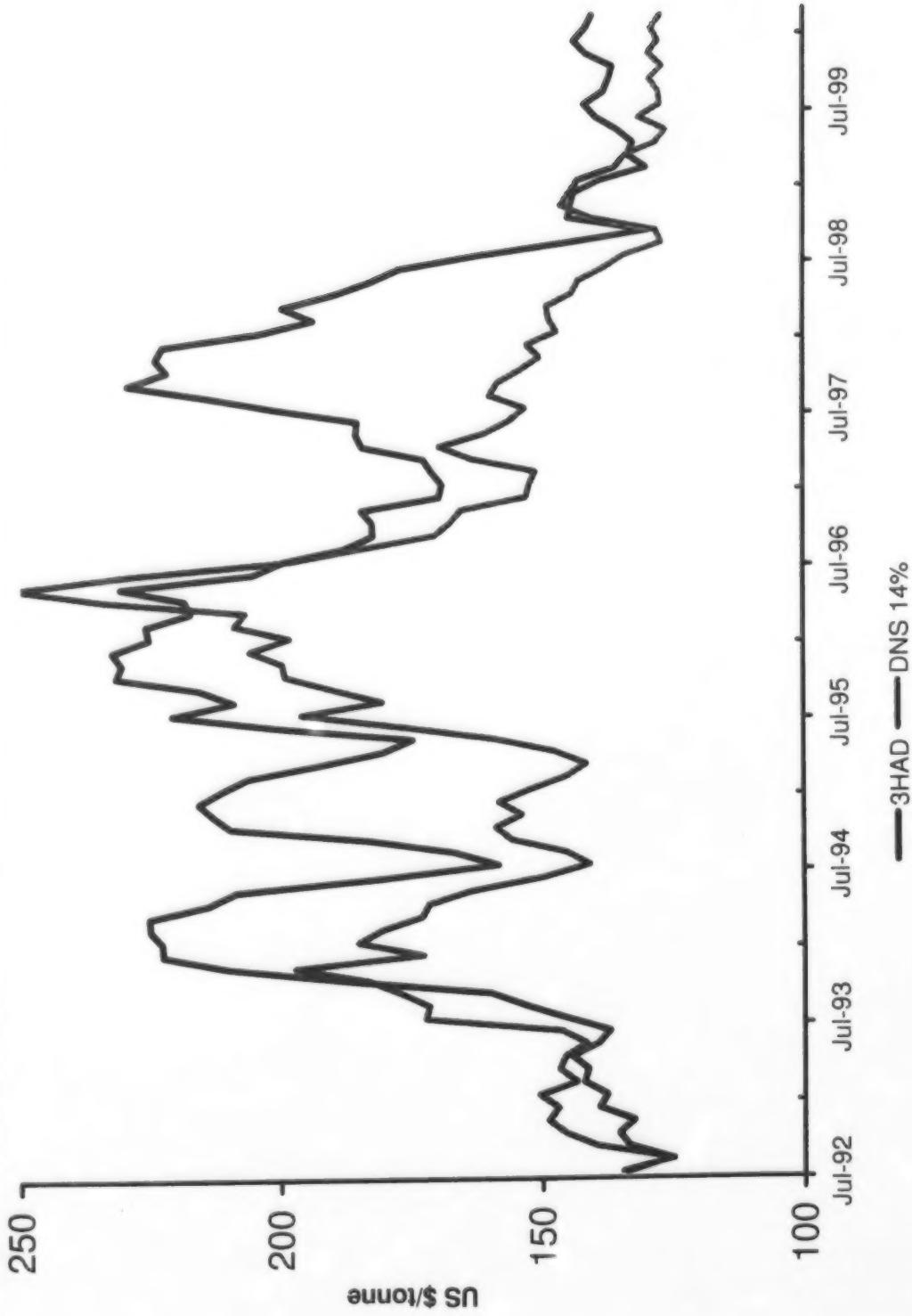
## WORLD WHEAT PRICES 1992 to 2000



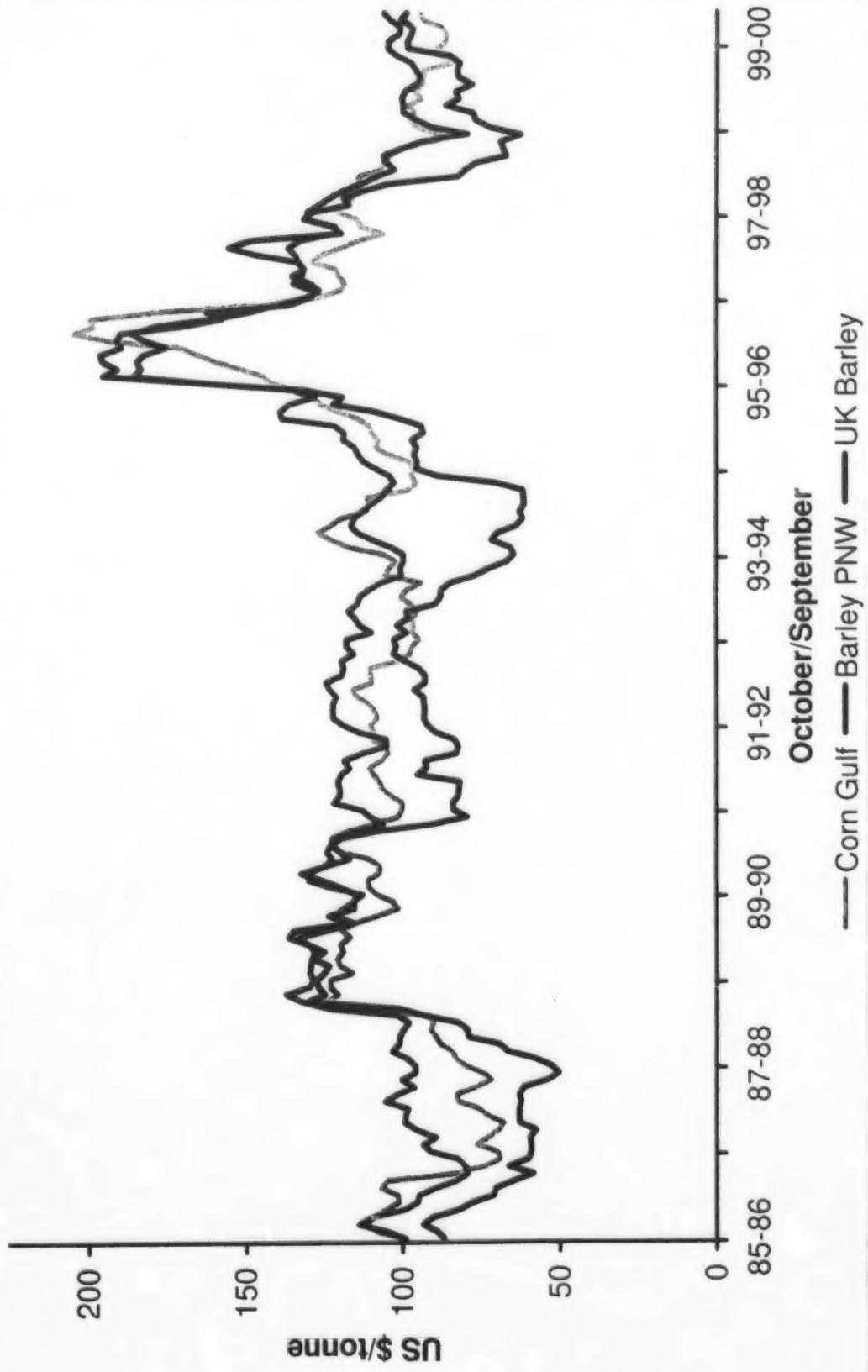
**U.S. DURUM AND SPRING WHEAT PRICES  
1985-86 to 1999-2000 (Duluth-Superior)**



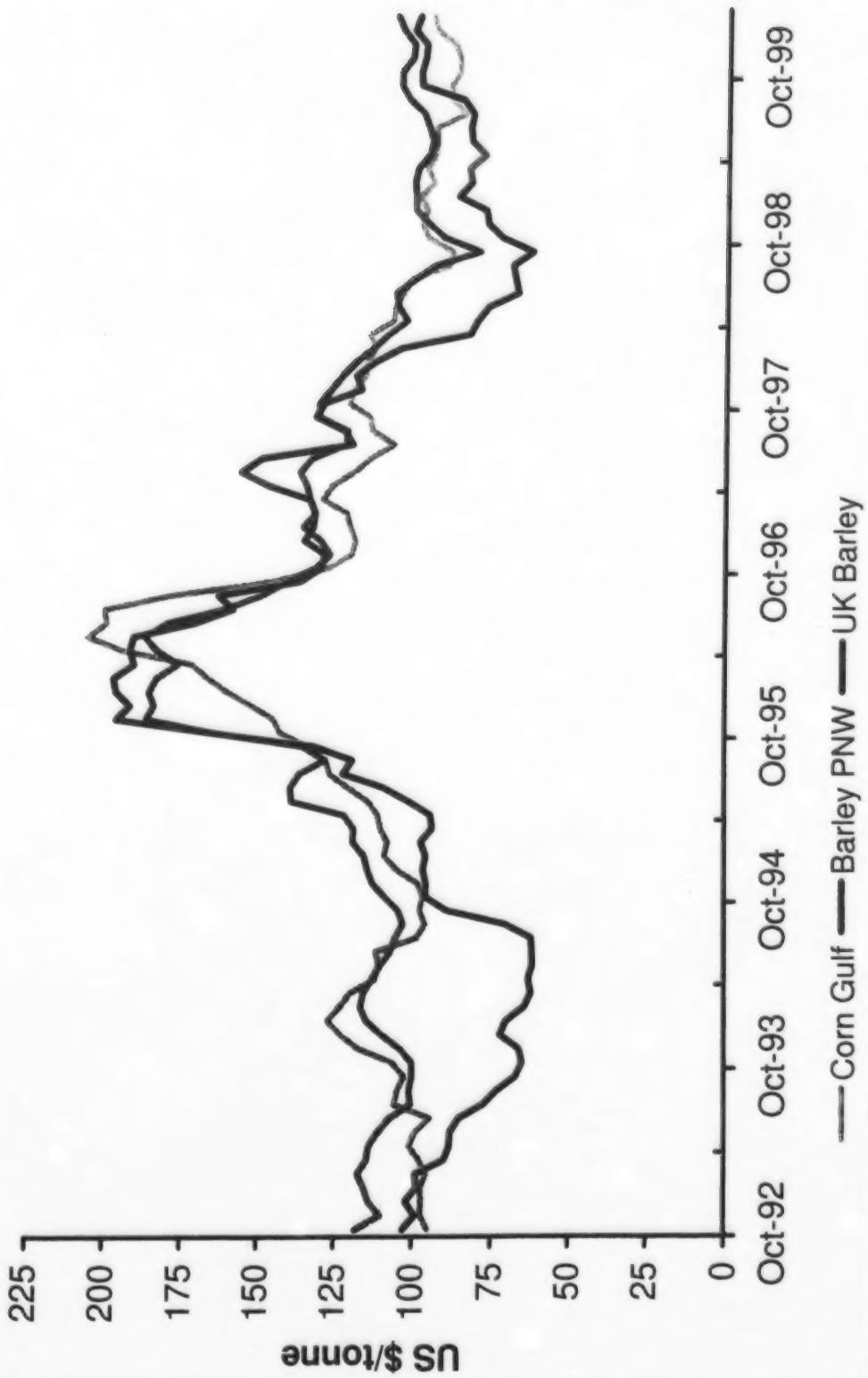
**COMPARISON OF 3HAD and DNS 14% WHEAT PRICES  
1992 to 2000 (Duluth Superior)**



## COARSE GRAIN PRICES 1985-86 to 1999-2000



## COARSE GRAIN PRICES 1992 to 2000



**CANADA: CATTLE & CALVES SUPPLY AND DISPOSITION**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- 000 head -														
<b>Beginning Inventories (Jan 1)</b>	10,956	10,667	10,756	10,984	11,220	11,289	11,869	11,860	12,012	12,709	13,402	13,453	13,272	12,981
<b>% change</b>	-2.6%	0.8%	2.1%	2.1%	0.6%	5.1%	-0.1%	1.3%	5.8%	5.5%	0.4%	-1.3%	-1.3%	-2.2%
<b>Cattle Slaughter Only</b>	3,511	3,195	3,086	3,121	2,892	2,726	2,835	2,685	2,727	2,791	3,143	3,257	3,410	1,898 <sup>1</sup>
<b>% change</b>	-9.0%	-3.4%	1.1%	-7.3%	-5.7%	-4.0%	-5.3%	1.6%	2.3%	12.6%	3.6%	4.7%	n/a	n/a
<b>Live Cattle Exports</b>	221	234	461	445	823	841	1,240	1,188	983	1,109	1,481	1,332	1,300	564 <sup>1</sup>
<b>% change</b>	5.9%	97.0%	-3.5%	84.9%	2.2%	47.4%	-4.2%	-17.3%	12.8%	33.5%	-10.1%	-2.4%	-2.4%	n/a
<b>Live Cattle Imports</b>	61	66	32	40	13	43	33	48	95	79	47	35	46	92 <sup>1</sup>
<b>% change</b>	8.2%	-51.5%	25.0%	-67.5%	230.8%	-23.3%	45.5%	97.9%	-16.8%	-40.5%	-25.5%	31.4%	31.4%	n/a
<b>Cattle &amp; Calf Marketings</b>	3,672	3,363	3,516	3,526	3,701	3,524	4,042	2,825	3,615	3,822	4,577	4,555	4,663	2,554 <sup>1</sup>
<b>% change</b>	-8.4%	4.5%	0.3%	5.0%	-4.8%	14.7%	-20.1%	28.0%	5.7%	19.8%	-0.5%	2.4%	2.4%	n/a
<b>Calf Marketings</b>	608	534	533	556	523	515	461	382	3	374	380	413	372	n/a
<b>% change</b>	-12.2%	-0.2%	4.3%	-5.9%	-1.5%	-10.5%	-17.1%	-8.6%	7.2%	1.6%	8.7%	-9.9%	-9.9%	n/a

P Preliminary

n/a - not available

<sup>1</sup> Slaughter, exports, imports and marketings for cattle and calves for January-June-99.

## CANADA: BEEF SUPPLY AND DISPOSITION

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
thousand tonnes														
<b>Beginning Stocks</b>	18	13	12	17	16	13	15	15	23	30	24	22	22	24
<b>% change</b>	-27.8%	-7.7%	41.7%	-5.9%	-18.8%	15.4%	0.0%	53.3%	30.4%	-20.0%	-8.3%	0.0%	9.1%	9.1%
<b>Total Production<sup>1</sup></b>	985	913	907	906	858	823	857	822	862	888	976	1,034	1,108	n/a
<b>% change</b>	-7.3%	-0.7%	0.1%	-5.5%	-4.1%	4.1%	-4.1%	4.9%	3.0%	5.9%	9.9%	7.2%	n/a	n/a
<b>Beef Exports</b>	102	89	82	104	105	105	156	188	217	215	282	356	412	n/a
<b>Beef Imports</b>	110	134	153	158	185	217	218	266	281	252	235	250	237	n/a
<b>Total Disappearance</b>	997	959	972	963	941	933	919	891	919	931	928	931	n/a	n/a
<b>% change</b>	-3.8%	1.4%	-0.9%	-2.3%	-0.9%	-1.5%	-0.9%	-3.0%	3.1%	1.3%	0.0%	-0.3%	0.3%	n/a
<b>Per Capita Disappearance (kg)<sup>2</sup></b>	27.8	26.4	26.4	25.7	24.7	24.3	23.6	22.7	23.1	23.1	22.9	22.6	22.4	n/a

## CANADA: VEAL SUPPLY AND DISPOSITION

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
thousand tonnes														
<b>Beginning Stocks</b>	0.7	0.6	0.3	1.6	0.7	0.5	0.4	0.5	0.6	1.3	0.6	0.7	0.6	0.6
<b>% change</b>	-14.3%	-50.0%	-433.3%	-56.3%	-28.6%	-20.0%	50.0%	0.0%	116.7%	-53.8%	16.7%	-14.3%	0.6%	0.0%
<b>Total Production<sup>1</sup></b>	43.1	40.4	40.5	43.5	42.2	43.2	42.1	37.3	37.6	40.3	40.3	42.1	42.4	n/a
<b>% change</b>	-6.3%	0.2%	7.4%	-3.0%	2.4%	-2.5%	-11.4%	0.8%	7.2%	0.0%	4.5%	4.5%	0.7%	n/a
<b>Veal Exports</b>	2.3	3.5	3.7	5.3	4.3	3.0	2.5	3.8	4.1	4.2	4.2	4.5	4.5	n/a
<b>Veal Imports</b>	1.7	1.2	-	-	5.3	2.6	3.2	3.8	5.2	3.6	2.5	3.1	2.7	n/a
<b>Total Disappearance</b>	42.6	38.5	35.5	39.1	42.4	41.5	42.1	38.6	38.4	40.4	38.5	41.1	40.7	n/a
<b>% change</b>	-9.6%	-7.8%	10.1%	8.4%	-2.1%	1.4%	-8.3%	-0.5%	5.2%	-4.7%	6.8%	-1.0%	n/a	n/a
<b>Per Capita Disappearance (kg)<sup>3</sup></b>	1.6	1.4	1.3	1.4	1.5	1.5	1.4	1.3	1.4	1.3	1.4	1.3	1.3	n/a

Preliminary

n/a - not available

<sup>1</sup> dressed weight

<sup>2</sup> retail basis

<sup>3</sup> carcass basis

**USA: CATTLE & CALVES SUPPLY AND DISPOSITION**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- thousand head -														
Beginning Inventories (Jan 1)	105,378	102,118	99,622	96,740	95,816	96,383	97,556	99,176	100,974	102,785	103,548	101,656	99,744	98,522
% change	-3.1%	-2.4%	-2.9%	-1.0%	0.6%	1.2%	1.7%	1.7%	1.8%	1.8%	0.7%	-1.8%	-1.9%	-1.2%
Total Slaughter	41,046	38,792	37,981	36,328	35,277	34,369	34,489	34,746	35,691	37,294	38,575	38,111	37,138	37,637
% change	-5.5%	-2.3%	-4.1%	-2.9%	-2.6%	-2.6%	0.3%	0.7%	2.7%	4.5%	3.4%	-1.2%	-2.6%	1.3%
Live Exports	108	131	321	169	120	311	322	153	231	95	174	282	285	265
% change	21.3%	145.0%	-47.4%	-29.0%	159.2%	3.5%	-52.5%	51.0%	-58.9%	83.2%	62.1%	1.1%	-7.0%	
Live Imports	1,407	1,200	1,332	1,459	2,135	1,939	2,255	2,499	2,083	2,786	1,965	2,046	2,034	1,875
% change	-14.7%	11.0%	9.5%	46.3%	-9.2%	16.3%	10.8%	-16.6%	33.7%	-29.5%	4.1%	-0.6%	-0.6%	-7.8%
Total Marketings	39,747	37,723	36,870	35,036	33,262	32,741	32,556	32,400	33,839	34,603	36,784	36,347	35,389	36,027
% change	-5.1%	-2.3%	-5.0%	-5.1%	-1.6%	-1.6%	-0.6%	-0.5%	4.4%	2.3%	6.3%	-1.2%	-2.6%	1.6%

**USA: BEEF SUPPLY AND DISPOSITION**

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- thousand tonnes -														
Beginning Stocks	195	190	177	193	154	183	193	193	166	242	252	239	174	215
% change	-2.6%	-6.8%	9.0%	-20.2%	18.8%	5.5%	-14.0%	45.8%	4.1%	-5.2%	-27.2%	-23.6%	-15.6%	181
Total Production	11,292	10,894	10,880	10,633	10,464	10,534	10,613	10,584	11,194	11,585	11,749	11,714	11,804	12,050
% change	-3.6%	0.0%	-2.3%	-1.6%	0.7%	0.7%	-0.3%	5.8%	3.5%	1.4%	-0.3%	-0.3%	0.8%	2.1%
Beef Exports (Includes Veal)	239	277	313	464	456	539	601	578	731	826	851	969	985	1,071
Beef Imports (Includes Veal)	978	1,040	1,092	988	1,069	1,091	1,107	1,089	1,075	954	940	1,063	1,198	1,272
Total Domestic Consumption	12,036	11,660	11,643	11,196	11,048	11,076	11,146	11,019	11,528	11,726	11,903	11,767	12,051	12,261
% change	-3.1%	-0.1%	-3.8%	-1.3%	0.3%	0.6%	-1.1%	4.6%	1.7%	1.5%	-1.1%	-2.4%	-2.4%	1.7%
Per Capita Consumption (kg) <sup>1</sup>	35.70	34.34	32.70	31.25	30.75	30.53	30.16	29.53	30.39	30.62	30.93	30.35	30.89	31.39

P - preliminary  
<sup>1</sup> retail weight

Source: USDA - Livestock, Dairy, and Poultry Situation and Outlook  
USDA - PS&D View Database

### CANADA: HOG SUPPLY AND DISPOSITION

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- thousand head -														
<b>Beginning Inventories (Jan 1)</b>	9,967	9,998	10,801	10,951	10,392	10,172	10,596	10,743	10,534	11,291	11,588	11,480	11,985	12,403
<b>% change</b>	0.3%	8.0%	1.4%	-5.1%	-2.1%	4.2%	1.4%	-1.9%	7.2%	2.6%	-0.9%	4.4%	3.5%	
<b>Total Slaughter</b>	14,399	14,735	15,439	14,683	14,323	15,468	15,203	15,476	15,771	15,178	15,392	16,865	13,994 <sup>1</sup>	n/a
<b>% change</b>	2.3%	4.8%	0.0%	-4.9%	-2.5%	8.0%	-1.7%	1.8%	1.9%	-3.8%	1.4%	9.6%	n/a	
<b>Live Hog Exports</b>	502	428	868	1,007	892	1,066	672	839	915	1,748	2,781	3,181	3,182	3,015 <sup>1</sup>
<b>% change</b>	-14.7%	102.8%	16.0%	-11.4%	19.5%	-37.0%	24.9%	9.1%	91.0%	59.1%	14.4%	0.0%	n/a	
<b>Live Hog Imports</b>	-	-	3.1	0.7	0.6	1.2	1.2	1.4	4.5	3.1	2.2	3.3	8.3	5.6 <sup>1</sup>
<b>Total Marketings</b>	14,901	15,162	16,304	16,445	15,574	15,388	16,139	16,040	16,387	17,516	17,956	18,562	20,038	17,003 <sup>1</sup>
<b>% change</b>	1.8%	7.5%	0.9%	-5.3%	-1.2%	4.9%	-0.6%	-0.6%	2.2%	6.9%	2.5%	3.4%	8.0%	n/a

### CANADA: PORK SUPPLY AND DISPOSITION

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- thousand tonnes -														
<b>Beginning Stocks</b>	9	8	9	13	12	11	14	13	11	15	15	13	20	33
<b>% change</b>	-11.1%	12.5%	44.4%	-7.7%	-8.3%	27.3%	-7.1%	-15.4%	36.4%	0.0%	-13.3%	53.8%	65.0%	
<b>Total Production<sup>2</sup></b>	1,094	1,122	1,182	1,177	1,124	1,096	1,208	1,194	1,229	1,276	1,228	1,257	1,338	n/a
<b>% change</b>	2.6%	5.3%	-0.4%	-4.5%	-2.5%	-10.2%	-1.2%	2.9%	3.8%	-3.8%	2.4%	6.4%		
<b>Pork Exports</b>	272	301	285	297	270	296	303	301	357	372	420	432	n/a	
<b>Pork Imports</b>	18	22	14	12	15	16	22	27	27	39	60	63	n/a	
<b>Manufacturing &amp; Waste</b>	113	116	122	121	116	113	124	123	127	131	126	129	138	n/a
<b>Total Disappearance</b>	728	727	752	784	724	805	792	824	815	770	760	818	816	n/a
<b>% change</b>	-0.1%	3.4%	4.3%	-7.7%	0.1%	11.0%	-1.6%	4.0%	-1.1%	-5.5%	-1.3%	7.6%		
<b>Per Capita Disappearance<sup>3</sup> (kg)</b>	21.1	20.6	21.2	21.7	19.8	19.7	21.6	21.0	21.6	19.7	19.3	20.5	n/a	
<b>% change</b>	-1.4%	1.9%	2.4%	-8.8%	-0.5%	9.6%	-2.8%	2.9%	-2.3%	-6.6%	-2.0%	6.2%		

<sup>1</sup>Preliminary; n/a-not available

<sup>2</sup>January-September '99.

<sup>3</sup>dressed weight

<sup>a</sup> retail basis

### USA: HOGS SUPPLY AND DISPOSITION

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- thousand head -														
<b>Beginning Inventories (Dec 1)</b>	52,314	51,001	54,384	55,466	53,768	54,416	57,649	58,202	57,940	59,758	58,201	56,124	61,158	62,206
<b>% change</b>	-3.3%	-2.5%	6.6%	2.0%	-3.0%	1.2%	5.9%	1.0%	-0.5%	3.1%	-2.6%	-3.6%	9.0%	1.7%
<b>Total Slaughter</b>	79,956	81,422	88,196	89,006	85,391	88,604	94,888	93,069	95,696	96,326	92,394	91,961	101,029	100,863
<b>% change</b>	-5.9%	1.8%	8.2%	1.0%	-4.1%	3.8%	7.1%	-1.9%	2.6%	0.7%	-4.1%	-0.5%	9.9%	-0.2%
<b>Live Exports</b>	13	7	125	93	57	268	106	41	136	16	56	55	229	272
<b>% change</b>	-27.8%	-46.2%	168.7%	-25.6%	-38.7%	370.2%	-60.6%	-61.5%	235.0%	-88.2%	250.0%	-1.8%	316.4%	18.8%
<b>Live Imports</b>	504	446	836	1,074	890	1,058	675	840	921	1,750	2,779	3,179	4,123	3,693
<b>% change</b>	-58.9%	-11.5%	87.4%	28.5%	-17.1%	18.9%	-36.2%	24.5%	9.7%	90.0%	58.8%	14.4%	29.7%	-5.6%
<b>Total Marketings</b>	79,465	80,983	87,425	88,025	84,558	87,814	94,319	92,270	94,911	94,582	89,671	88,837	97,135	97,242
<b>% change</b>	-5.1%	1.9%	8.0%	0.7%	-3.9%	3.9%	7.4%	-2.2%	2.9%	-0.3%	-5.2%	-0.9%	9.3%	0.1%

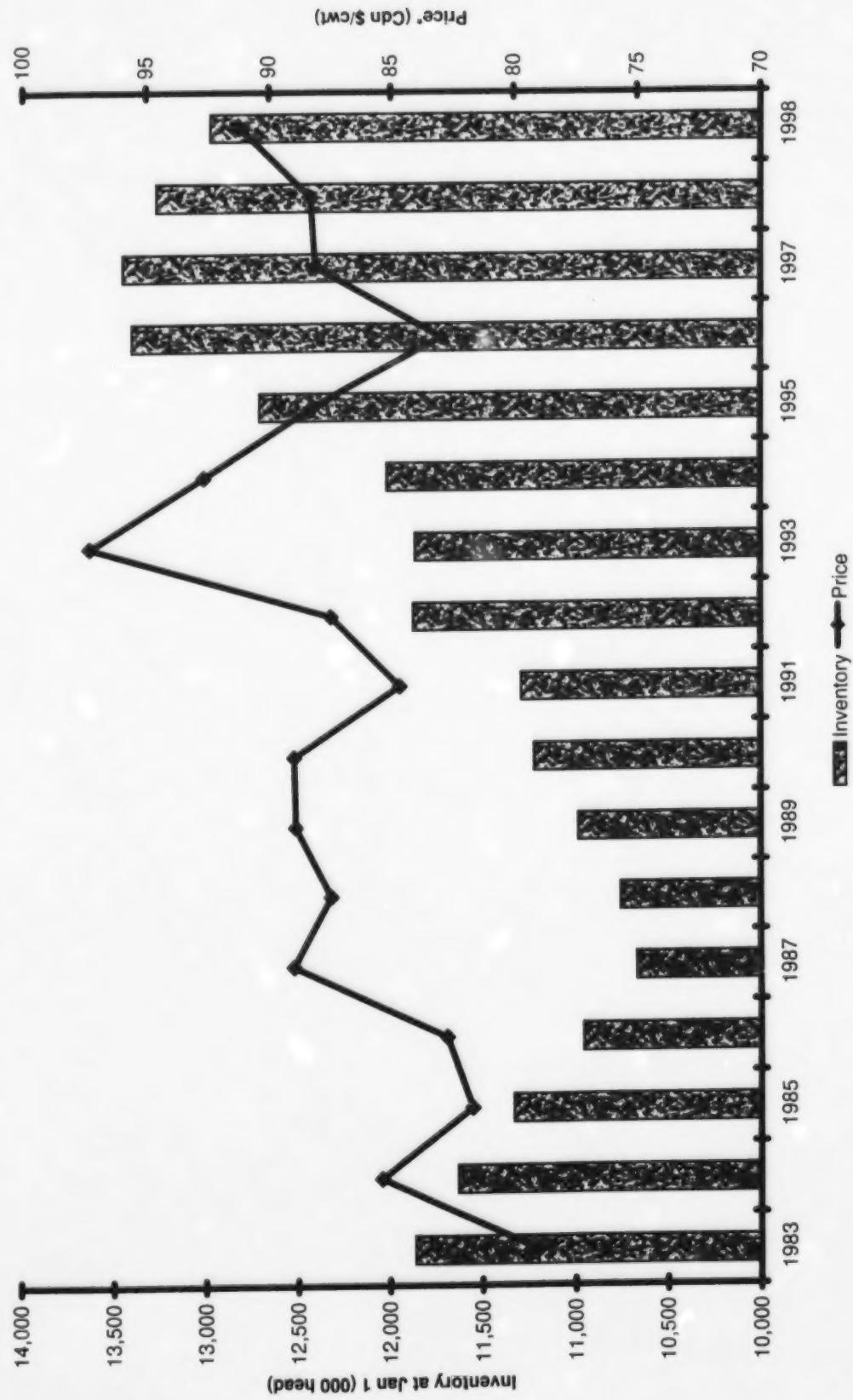
### USA: PORK SUPPLY AND DISPOSITION

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999P
- thousand tonnes -														
<b>Beginning Stocks</b>	131	115	163	196	142	134	176	175	163	199	180	166	185	266
<b>% change</b>	-12.2%	41.7%	21.5%	-28.3%	-5.6%	31.3%	-0.6%	-6.9%	22.1%	-9.5%	-7.8%	11.4%	43.8%	
<b>Total Production</b>	6,379	6,519	7,114	7,173	6,965	7,257	7,817	7,751	8,027	8,096	7,764	7,835	8,623	8,716
<b>% change</b>	2.2%	9.1%	0.8%	-2.9%	4.2%	7.7%	-0.8%	3.6%	0.9%	-4.1%	0.9%	10.1%	1.1%	
<b>Pork Exports</b>	39	49	88	119	108	128	185	202	249	357	440	474	557	572
<b>Pork Imports</b>	509	542	515	406	407	351	293	336	337	301	280	287	319	375
<b>Total Domestic Consumption</b>	6,885	6,964	7,506	7,516	7,272	7,438	7,926	7,897	8,079	8,059	7,618	7,629	8,304	8,536
<b>% change</b>	1.4%	7.8%	0.1%	-3.2%	2.3%	6.6%	-0.4%	2.3%	-0.2%	-5.5%	0.1%	8.8%	8.8%	2.8%
<b>Per Capita Consumption (kg)<sup>1</sup></b>	26.67	26.85	28.44	28.67	22.59	22.82	24.09	23.77	24.09	23.77	22.27	22.09	23.86	24.45

<sup>1</sup> retail weight

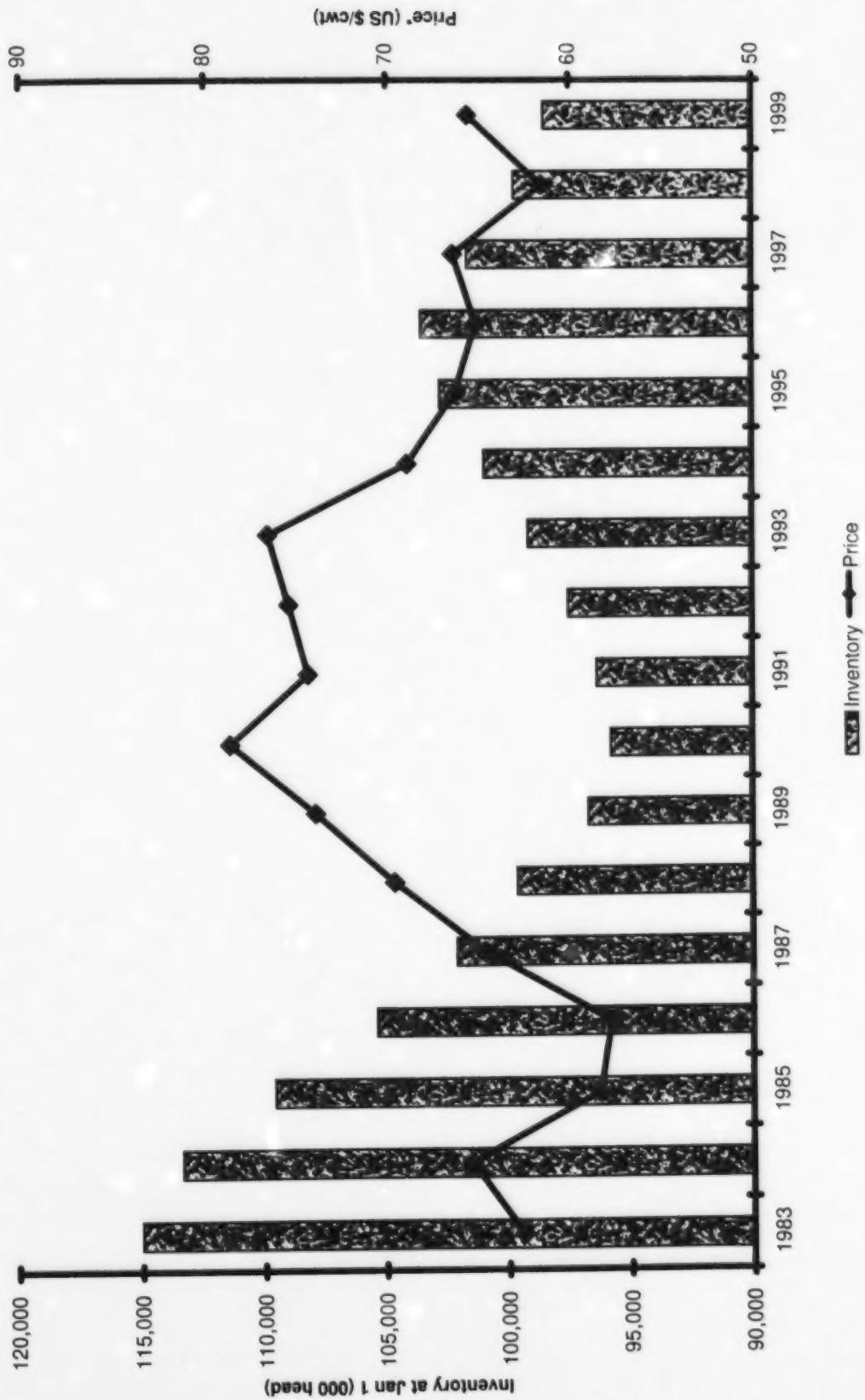
Source: USDA - Livestock, Dairy, and Poultry Situation and Outlook  
USDA - PSD View Database

## CANADA: BEEF INVENTORY vs PRICE



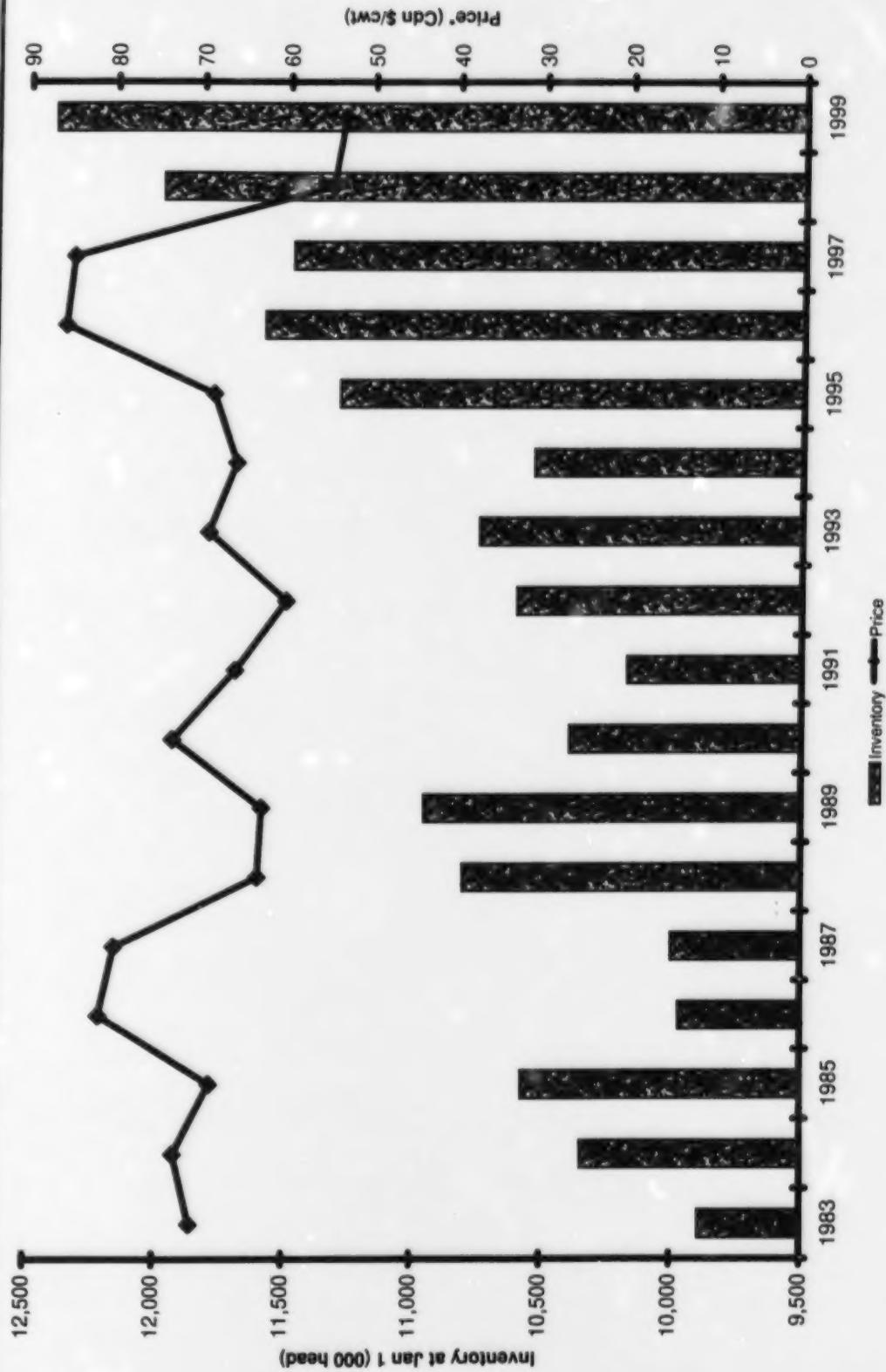
\* A1,A2 steers, weighted average at Toronto

## USA: BEEF INVENTORY vs PRICE



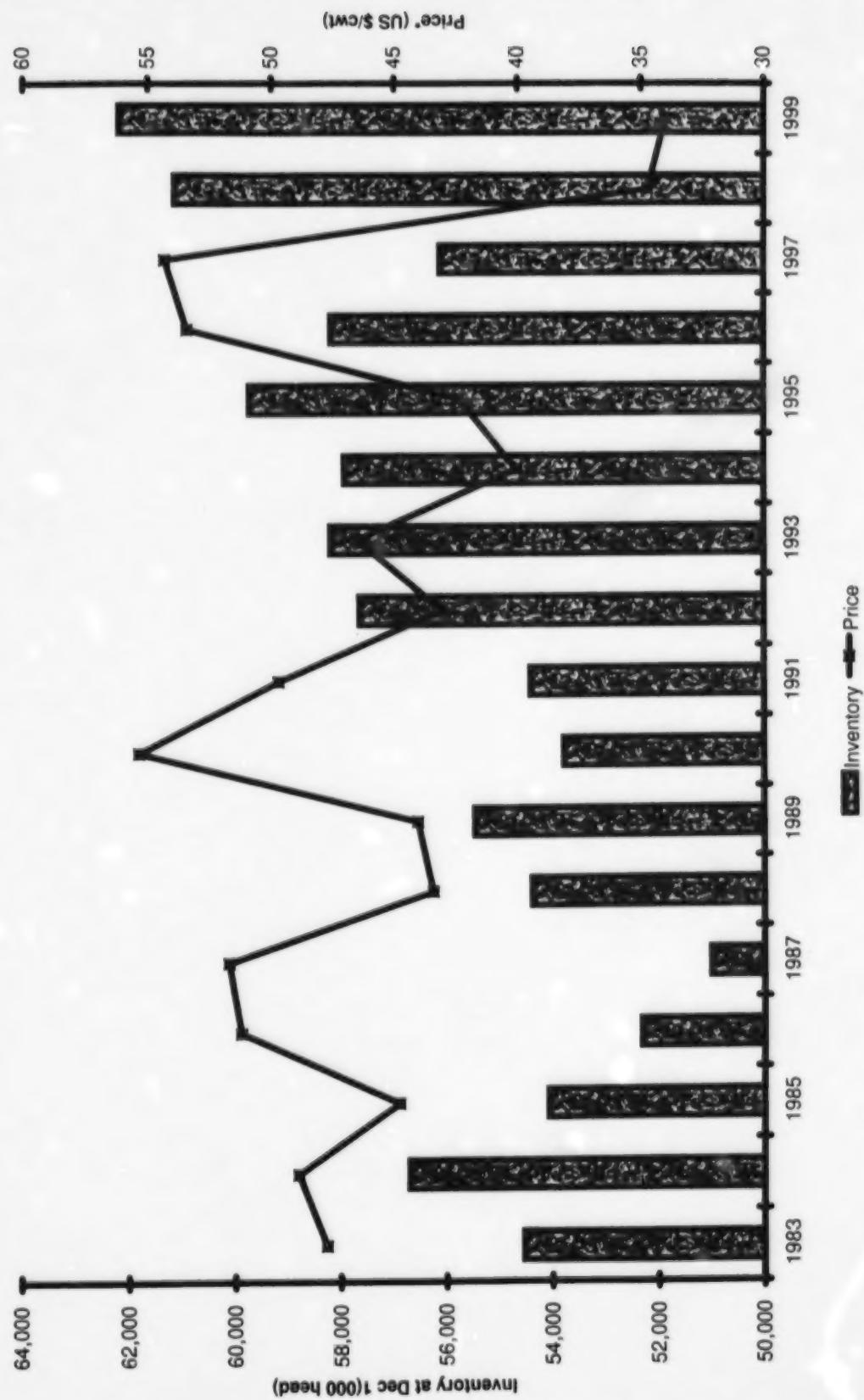
\* market price choice steers, Neb.

## CANADA: PORK INVENTORY vs PRICE



\* Index 100 hogs, dressed, weighted average in Toronto

## USA: PORK INVENTORY vs PRICE



\* market price, barrows & gilts, la/Mn



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**Remarks by Paul Jenkins  
Deputy Governor of the Bank of Canada  
to the Canadian Wheat Board  
Winnipeg, Manitoba.  
28 February 2000**

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### **The Canadian and International Outlook: Issues and Trends**

Thank you for the introduction. It's a pleasure for me to be here in Winnipeg this morning.

The opening of your Grain World 2000 conference gives me the opportunity to provide the outlook for the Canadian and global economies as seen by the Bank of Canada.

The outlook, in a nutshell, is looking pretty good. There are some important risks which I'll outline in a few minutes, but things are much better compared to what we have faced in recent years.

#### **A Perspective on the Past Three Years**

As you are well aware, between mid-1997 and the end of 1998, world prices for the primary commodities that Canada produces and exports declined on average by some 20 per cent. These price declines ranged from 10 per cent for wheat to 34 per cent in the case of base metals.

While some primary products, including grains, had already been experiencing some downward price pressure, the cause of the widespread decline in commodity prices beginning in the summer of 1997 was the financial market crisis that began in Southeast Asia and then spread to Russia and Latin America in the late summer and autumn of 1998. But the effects of the crisis did not stop there. There was an unprecedented loss of liquidity in financial markets around the world for all but the highest quality instruments. This led to fears of a world-wide credit crunch.

As a result of these developments, global economic growth as estimated by the IMF slowed sharply to 2½ per cent in 1998 from an average annual growth of 4¼ per cent over the previous two years.

Today the outlook for the world economy is much improved. When the IMF publishes its next economic outlook later this spring, it will likely project world growth for this year approaching 4 per cent.

What lessons have been learned from the turmoil of the 1997-98 period? How confident are we that we will not see a repeat of events? What can we point to that gives us some assurance that we are on a more solid footing going forward?

### **Lessons for emerging markets**

Let me start with the situation in those countries where the financial market crisis began. There was no single cause of the severe economic and financial difficulties that countries like Thailand, Malaysia, South Korea, Indonesia, Russia, Brazil and Argentina experienced starting in 1997. What we saw, in various combinations, were large and growing current account deficits, a reliance on short-term capital, overvalued fixed

exchange rates, weak financial systems, over reliance on public funds and a lack of transparency in their financial positions.

In the countries that were hardest hit, there was a chain of guarantees that included fixed exchange rates, implicit or explicit guarantees given by governments to financial and non-financial corporations as well as the possibility of international bail-outs. These guarantees distorted market incentives and resulted in a surge of capital into these countries, more money than could prudently be invested.

The international community has been working hard to address these problems and progress is being made on a number of fronts. Much more remains to be done, but a number of the affected countries have made dramatic recoveries over the past year because they strengthened their macroeconomic policy framework, increased disclosure of their financial transactions, and took steps to improve their financial systems through better accounting, regulatory and prudential standards.

Global financial markets have taken note of this progress. Capital flows are returning to these countries, but with far more attention being paid to risk assessment and to pricing credit than was the case leading up to mid-1997.

Allow me to underscore the importance of these capital flows. The steps being taken in response to the international financial crisis are designed to improve and strengthen our market-based global financial system. Developing countries need long-term access to capital to help them grow and develop. This can best be accomplished by ensuring their access to world savings through open capital markets. Thus, it is essential that the efforts of the international community to improve the functioning of the global

financial system continue apace so that as many countries as possible can experience the benefits.

### **Lessons for Canada**

What about Canada's experience over this period? What perspectives can we offer?

Looking back, we have gained several important insights from the way the Canadian economy handled the 1997-98 financial market crisis. First, the sound macroeconomic framework we now have in place in Canada helped our economy come through this difficult period much better than during past episodes when we were hit by a major external shock. There are two main elements to this sounder framework: our low and stable inflation environment which the Bank of Canada is committed to preserving; and a downward trend in our public debt relative to the size of our economy that began with the virtual elimination of government deficits in the latter half of the 1990s.

Another factor I would quickly point to is the major restructuring that Canadian businesses have gone through during the 1990s in response to stronger global competition and technological change.

Finally, I would point to Canada's flexible exchange rate as a very important factor. The exchange rate plays the role of a shock-absorber. When the world prices of commodities that Canada sells declined sharply, we had no choice but to adjust to this new reality. The decline in our exchange rate facilitated that adjustment. In the absence of exchange rate flexibility, the economy would have gone through a more difficult period.

## The Economic Outlook outside North America

Let me now turn to the economic outlook. First, I will review the situation outside North America, and then discuss the U.S. and Canadian economies. I will then try to draw out some implications for commodity prices.

The recovery in overseas economies that have undertaken significant structural reforms is well underway. The performance of emerging-market economies in general through the latter part of 1999 was better than expected, helping to contribute to the strengthening in world demand. Indeed, the rebound in some countries, like Korea, has been dramatic. Economic activity in Mexico has also been strong.

But in a number of other Latin American countries growth remains weak. These countries have significant debt-service burdens and remain vulnerable to the likelihood of further increases in global interest rates.

In Russia, there has been a relatively strong recovery by past standards, reflecting rising commodity prices (mostly oil) and a devaluation of the currency. But they are certainly not out of the woods yet.

Among the major industrial economies, there are marked differences that highlight some key risks to the outlook, but overall we are seeing a strengthening trend which has given rise to increases in central bank lending rates in a number of countries.

In Japan, the authorities are counting on a zero-interest-rate monetary policy and a new stimulus package of government spending that was announced in November to get the Japanese economy moving along a sustained growth path. The recovery that looked very positive in the first half of 1999 stopped last summer after the previous government

stimulus package ended. Japan's economy actually declined in the second half of 1999. Overall, Japan still faces significant challenges because of higher energy prices and the need for more structural adjustment of its financial and industrial sectors.

Across the Atlantic, the European economy picked up in the last half of 1999 more strongly than expected mainly because of a sharp rise in exports. As well, business and consumer confidence has improved in the euro area. The United Kingdom economy has also expanded more rapidly than expected.

To help alleviate risks of inflation and thereby foster conditions of sustainable growth, both the European Central Bank and the Bank of England have raised their official interest rates in recent months.

### **The Economic Outlook for the United States**

The main focus of our attention these days, however, is the situation south of the border. The U.S. economy continues to outstrip expectations and remains the strongest performing economy in the world. Last year, the rate of growth on an annual average basis exceeded 4 per cent after subtracting for inflation, with growth in the fourth quarter close to 7 per cent (at an annual rate). The unemployment rate in January dropped to 4 per cent, its lowest level since 1970. At the same time, the year-over-year inflation rate excluding food and energy was 1.9 per cent in January, lower than it was the year before. The combination of strong economic and employment growth plus low inflation after a nine-year expansion is, quite simply, amazing. Another way of measuring this performance is in terms of the very robust productivity growth that has occurred in the U.S. economy over the past couple of years.

The big question is what happens next in the United States. The growth in household spending is expected to slow somewhat -- higher interest rates are expected to have some impact and the increase in energy prices should also work to moderate the pace of activity. Still, current information points to an underlying rate of expansion well above the U.S. economy's capacity to produce and a labour market that is very tight. Moreover, the U.S. can no longer rely on some factors that have so far helped to restrain inflation. The recovery outside North America is beginning to take up slack globally, and, because the United States is a net importer of commodities, the increase in commodity prices is now a source of price pressure. And with a rate of expansion in excess of its capacity to produce, the United States is now running a large trade deficit which is being financed by a net inflow of funds from the rest of the world.

Because of the increased inflation risks, the U.S. Federal Reserve raised its interest rate in mid-November and again earlier this month. Most analysts would agree that the Fed's success in preventing the U.S. economy from overheating and bringing it down to a "soft landing" is critical for the world economy and certainly for Canada.

### **The Economic Outlook for Canada**

Let me now turn to the Canadian economy.

After economic growth slowed in 1998, we saw a very strong recovery last year and we now expect that the final numbers will show that the economy expanded by over 4 per cent on a fourth-quarter over fourth-quarter basis in 1999. And this good news shows up in the employment numbers. The national unemployment rate fell to a 23-year low of 6.8 per cent in January. Despite strong growth, core inflation (excluding food, energy and the effect of indirect taxes) was 1.3 per cent on a year-over-year basis in

January. Over the same time period, the total CPI was up 2.3 per cent, reflecting the recent step-up in energy prices. Both measures were below what we had expected.

A number of factors have supported the economic upswing in Canada. On the external side, we have greatly benefited from an amazingly strong U.S. market. The pickup in growth in Europe and the recovery in some of the Asian economies that were most hurt by the financial crisis have also helped. Another important factor has been the turnaround in the prices of many of the commodities that we produce in response to firmer world economic activity -- more about that in a moment.

Stronger domestic spending in Canada, reflecting growing confidence, rising employment, and relatively low interest rates made possible by our low and stable inflation rate and progress on the fiscal front, have also been instrumental in boosting the rate of economic expansion. Forecasters now expect the Canadian economy to have another good year in 2000. Last fall, the Bank projected economic growth in 2000 to be in a range of 2½ and 3½ per cent. We now see growth at the upper end of that range, close to 3½ per cent. (This morning, Statistics Canada is publishing real GDP data for the fourth quarter of 1999. We expect that these data will confirm the strong pace of activity going into this year.)

But what about the risks? Developments continue to underscore two main risks for Canada's economic outlook: stronger momentum of demand for Canadian output from both domestic and external sources, and the risk of potential inflation pressures in the United States spilling over into Canada.

An important element in our thinking about these risks is the fact that the Canadian economy is operating at what conventional estimates would suggest is full

capacity. But, in practice, it is very difficult to estimate exactly where is a sustainable operating level for the economy. And this is even harder after a period of major restructuring, such as we have experienced in Canada in the 1990s. It is quite likely that structural changes have raised the output potential of our economy. But we are not sure by how much.

To help us gauge where the economy is performing relative to potential, the Bank is paying close attention to a number of indicators, such as changes in expectations of future inflation, signs of pressures in product and labour markets, the growth of money and credit, and information gathered by our regional representatives from business contacts across Canada.

As I noted earlier, the latest consumer price inflation data for January published late last week were below what we had expected. We are looking closely at those numbers to assess their implications for the future trend of inflation, but we will also need to look closely at this morning's release of the fourth quarter National Accounts. In this context, I would emphasize again the importance we at the Bank of Canada place on keeping the future trend of inflation in Canada low and stable as the best contribution that monetary policy can make to a sustainable economic expansion.

### **Outlook for Commodity Prices**

Let me now turn to the implications of the economic outlook for non-energy commodity prices. We see that in general commodity prices have tracked the recovery in the world economy from the low point reached at the end of 1998. The rise in prices has been especially notable for livestock and base metals.

While the general upswing in commodity prices is expected to continue, prices for agricultural commodities remain historically low, largely because of the effect on grain prices of high levels of wheat stocks and estimates of global wheat production. There have been signs of recovery in corn prices following reports of higher consumption and news that production was lower than previously thought. As well, we have seen some recent firming of wheat prices.

Overall, given the strengthening global situation that I have described, I think it is fair to say that grain prices should be expected to improve. However, there are always uncertainties, particularly in making short-term forecasts of commodity prices, and we at the Bank will be very interested in hearing the Wheat Board's outlook for prices when it is released later today.

### **Conclusion**

Let me now conclude. Both the global and the Canadian economies have recently been performing well and there are good reasons to expect that they will continue to do so. This is perhaps the main message that you will take away from this session.

But I also want to underscore the risks and challenges we face. What happens in the United States will be of particular importance to the world economy and especially to Canada. As well, further substantial effort is required to complete the structural reforms that are underway in both major industrial and emerging-market economies.

Here at home, too, we have our own challenges. From the Bank of Canada's perspective, our challenge is to preserve our low and stable inflation environment in Canada as our contribution to a well-functioning economy.

Thank you for your attention. I am happy to answer any questions that you may have.



## **Panel Discussion: Genetically Modified Organisms: Reality, Perception and Marketing**

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**Presented By:**

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**Presented to:**

**Grain World 2000**  
Winnipeg, Manitoba  
February 28, 2000



# **A** gBiotech Issues that Matter to Farmers: yield and profitability

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Presented to the Canadian Wheat Board, Winnipeg, Manitoba. 28 February 2000

## **Take Home Message**

1. Farmers have been promised higher yields and higher profits when they adopt GE crop types. Adoption has been strong in the short term, presumably because farmers still believe in the potential of the new technology.
2. Independent (not industry-funded) research, whether in plots or in on-farm surveys, has found that farmers realize the promised yield and perhaps profit advantages only under specific circumstances. Pest (weed, insect) pressure must be high, or consist of pests which are difficult to control with conventional herbicides or insecticides in order for GE crops to be competitive. These circumstances do not occur often enough to account for the large-scale adoption of GE crops by farmers.
3. Evidence to support both product and process concerns with GE technology is increasingly prominent in the scientific literature. However, such concerns will evaporate when farmers realize that it is not to their advantage to grow the crops, because the promised yield and profit advantages are not realized often enough to be worthwhile.

## **Higher Yields (e.g. "Feed the World") and Profits?**

One of the lines of reasoning which has been widely used to justify GE technology is "feeding the world", and presumably doing it with higher yields and better pest control than can be achieved through conventional means. Of course, to do this, one must also convince farmers that it is to their advantage - higher returns over costs - to strive for the higher yields.

Crop yields *are* higher with transgenic crops, but **only when pest pressure** (e.g. weeds for herbicide-tolerance; European cornborer (ECB) for Bt-corn) **is high, or comes from pests that are difficult to control conventionally**. And even then, due to the increased cost of the new seed and technology package to control pests that may or may not materialize, evidence for higher returns to the farmer is lacking.

**Table 1. Does it pay to grow Bt corn to control European corn borer (ECB)?**

Authors	Region	Findings/Observations
Sears and Schaafsma (1998)	Ontario	cornborer would have to account for 10-15 bu/ac yield loss before Bt-corn became economically competitive
Nielsen (2000)	Indiana	<ul style="list-style-type: none"> <li>» levels of ECB pressure over the previous 20 years suggest Bt corn would not be profitable for the average corn producer;</li> <li>» comparison of the top 5 Bt hybrids with the top 5 non-GE hybrids in 1999, a year with low ECB pressure, showed no yield advantage to the Bt corn.</li> <li>» When compared in six regions of Indiana, Bt corn was superior - by 2 bu/ac - in only 1 region, similar in 1 region, and inferior - by 2-10 bu/ac in the other four regions.</li> <li>» Similar results have been obtained in Ohio, Illinois, and Missouri in 1999</li> </ul>
Duffy (1999)	Iowa	Based on 372 surveyed corn fields in 1998, Bt corn outyielded non-GE corn hybrids by 160 vs. 148 bu/ac, but produced only a \$4/ac advantage in returns to land and labor

Because cornborer populations become pestiferous infrequently and unpredictably, there appears to be little agronomic or economic justification for the large-scale planting of Bt corn which has occurred in the midwest and Ontario. Thus, it is difficult to conclude that the primary motivation of producers for adopting Bt-corn is either agronomic or economic.

**Table 2. Does it pay to grow RR soybeans?**

Authors	Region	Findings/Observations
Oplinger (1999)	40 trials, northcentral states	average 4% yield "drag" from RR soybeans (1998)
Benbrook (1999)	8200 comparisons, northcentral states	average yield drag of about 4.6 bu/ac or 6.7% (1998)
Nielsen (2000)	midwestern and north central states	RR cultivars yielded 4 and 2 bu/ac less in 1998 and 1999, respectively
Duffy (1999)	Iowa	based on 365 surveyed soybean fields, RR soybeans yielded 2 bu/ac (4%) less, and produced a profit of \$1/ac more than non-GE soybeans
Blaine (2000)	Mississippi	over previous 3 years, RR varieties are more variable in both yield and disease reaction than non-GE beans

Virtually all systematically conducted experimental contrasts, as well as on-farm surveys, find that RR soybean generally does not yield more, but in fact, yields the same or less than non-GE soybeans. One exception to this pattern is the USDA-ERS survey in Table 3, which does identify a few region-years of higher HT soybean yield.

Table 3. Summary of USDA ERS report Genetically Engineered Crops for Pest Management ([www.econ.ag.gov/new-at-ers](http://www.econ.ag.gov/new-at-ers)) for 1997 (adapted from Triplett, 2002)

Of 12 region-crop combinations:	Acre-Treatment <sup>1</sup> was:
Insecticide Use by GE vs. non GE crops was:	<ul style="list-style-type: none"> <li>■ equal in 7 (58%) (including Bt corn in the Heartland states and Bt cotton in most regions);</li> <li>■ lower in 4 (33%), and</li> <li>■ higher in 1 (by 53%, for Bt than for non-Bt cotton in the Mississippi Delta)</li> </ul>
Herbicide Use by GE vs. non GE crops was:	<ul style="list-style-type: none"> <li>■ equal for HT vs. nonHT corn in the Heartland;</li> <li>■ lower in 3 of the 5 regions where HT soybeans were grown; and</li> <li>■ equal for HT vs. nonHT cotton in Mississippi Delta, but lower for SE region</li> </ul>
Yield-97 by GE vs. nonGE crops was:	<ul style="list-style-type: none"> <li>■ equal in 7 (58%)</li> <li>■ higher in 4 (by 13-21%) - HT soy in 3 of 5 regions and Bt cotton in 1 region</li> <li>■ lower in 1 (by 12%) HT cotton in 1 region</li> </ul>
Yield-98 (of 18 region/crop combinations) by GE vs. nonGE crops was:	<ul style="list-style-type: none"> <li>■ equal in 12 of 18 (67%)</li> <li>■ higher in 6 of 18 (by 5-30%; Bt corn in 2 regions; HT corn in 1 region, HT soybean in 1 region, Bt cotton in 2 regions)</li> </ul>

<sup>1</sup>an acre-treatment is the number of different pesticides applied per acre times the number of repeat applications

Excessive use of Roundup is selecting for resistance and shifting weed populations to harder to control biotypes. Resistant biotypes have now been confirmed in rigid ryegrass (in Australia and in California) and most alarmingly, in goosegrass (in Malaysia) (Doll, 1999). Whereas the rigid ryegrass biotypes have not spread and remain isolated on particular fields, RR-resistant goosegrass has now spread to cover 12,500 acres in Malaysia. Goosegrass is among the 20 worst weeds in the world, with biotypes resistant to other herbicides in other areas. It is abundant in southern regions of Illinois, Missouri, Indiana, and Ohio, and is present in northern reaches of the same states (Doll, 1999).

Benbrook (1999) cited evidence of increasing glyphosate tolerance in waterhemp species, velvetleaf, and smartweed in the Midwestern US. The more that weed control strategies simplify down to a few HT traits, the faster will be the rate of resistance development to the targeted herbicides.

In part due to the more erratic performance of the crop in the/ field, including such significant, unintended side-effects as the stem splitting and yield reduction which has occurred in Georgia for the last two years (Coghlan, 2000), it is likewise unclear that profit potential is any greater than with non-GE soybeans.

## Does it pay to grow herbicide-tolerant canola?

Neil Harker and colleagues with AAFC in western Canada recently completed a 3-year small-plot study, soon to be published in the Canadian Journal of Plant Science. At 5 research station sites over 3 years, they compared yield and weed control from 3 herbicide-tolerant (RoundUp, Liberty, and Pursuit) GE canola cultivars with those of a conventional cultivar.

In two-thirds of the 14 site-years<sup>1</sup>, particularly where weed pressure was high<sup>2</sup> or tough-to-control weeds were present, herbicide-tolerant cultivars achieved better weed control and outyielded the conventional cultivar with common, post-emergent weed controls.

Their conclusion was that **when weed control is good**, based on sound crop rotations and weed control practices, **there is no advantage to growing GE cultivars**. Where tough weeds are problematic or sound weed control practices have not been implemented - as on new or rented land - fair enough, but these situations do not pertain on all canola land. Thus, it would appear that GE-canola could be agronomically justified on only a fraction of the 80% of western canola acreage that was sown to GE cultivars in 1999. It is difficult to reconcile these findings with the presumption that farmers are using GE canola to enhance their bottom line.

Another problem with herbicide-tolerant canola arises because of the prevalence of volunteer canola in wheat and barley fields, according to Alberta Ag researchers. To cope with the appearance of HT- canola volunteers in these same fields (MacArthur, 2000b), after just 3 years on the market, researchers have come up with a nine-point action plan:

The Nine-Point Strategy for Volunteer Herbicide-Tolerant Canola (MacArthur, 2000)	
1	Leave volunteers on the surface as long as possible, to promote germination and frost-kill
2	Till just prior to seeding
3	Mix herbicides when using products in groups 2, 6, 9, or 10
4	Avoid herbicides in groups 2, 6, 9, or 10; rotate herbicides to manage resistance
5	Use non-chemical weed control, as silage, green manure, and forages to control weeds
6	Include cereals, peas, and forages in rotation, to allow wider choice of herbicides
7	Scout fields for herbicide-tolerant volunteer canola
8	Grow competitive crops, use higher seeding rates, choose competitive varieties etc.
9	Swath at optimum developmental stage to reduce seed pod shattering at harvest

<sup>1</sup>1 of the 15 site-years was removed, due to unrelated problems

<sup>2</sup>Both from pre-existing weeds and from intentionally sown weeds

The added costs to producers of implementing this plan, whether paid by willing growers of GE crops or by neighbors who have been the involuntary recipients of genetic pollution, are just one of the disincentives that will increasingly detract from the practicality of this technology to farmers in the near future.

### Conclusions

Apart from the issue of ecological and food safety risks (see Benbrook, 2000; Clark, 2000a and b), GE crops do not appear to be returning either the yield or the profit that was promised to farmers. The current wave of "input" crop applications, such as herbicide tolerance and insect resistance, are beneficial only when pest pressure is high. Fair enough. But surely the more cogent question for profit-minded farmers is not "how best to cope with high pest pressure", but rather, **how to close the niche** which has allowed pests to proliferate to pestiferous proportions in the first place.

Genetic engineering is a genetic solution to a management problem, and a costly one at that if you consider the as-yet-ignored but nonetheless real costs of coping with genetic pollution and HT crop volunteers, resistance in pest/weed populations, erratic crop performance, and unpredictable pest populations. When farmers realize both the limited profit potential and the very real "extra" costs of GE crops, the attractiveness of this technology will change.

Benbrook, C. 2000. Who controls and who will benefit from plant genomics? An invited paper, presented before "The 2000 Genome Seminar: Genomic Revolution in the Fields" AAAS Annual Meeting Washington, D.C. 19 February 2000 (<http://www.biotech-info.net/AAASgen.html>)

Blaine, A. 2000. Agronomy Notes. Mississippi State University Extension Service.

Clark, E. Ann. 2000a. Clark, E. Ann. 2000. Food Safety of GM crops in Canada: toxicity and allergenicity. (<http://www.plant.uoguelph.ca/faculty/eclark/safety.htm>)

Clark, E. Ann. 2000b. Why is agbiotech not ready for prime time? It's the process, not just the products. Presented as the invited Elisabeth Laird Lecture, University of Winnipeg, Winnipeg, Manitoba. 17 Jan. 2000 (<http://www.plant.uoguelph.ca/faculty/eclark/laird.htm>).

Coghlan, A. 1999. Splitting headache. Monsanto's modified soya beans are cracking up in the heat. New Scientist (20 Nov. 1999) (<http://www.newscientist.com/ns/19991120/newsstory4.html>)

Doll, J. 1999. Glyphosate resistance in another plant. ([http://www.biotech-info.net/glyphosate\\_resist.html](http://www.biotech-info.net/glyphosate_resist.html))

Duffy, M. 1999. Does planting GMO seed boost farmers' profits? (<http://www.leopold.iastate.edu/99-3gmoduffy.html>)

MacArthur, M. 2000a. Control methods for volunteer canola. Western Producer 10 Feb 2000

MacArthur, M. 2000b. Triple-resistant canola weeds found in Alta. Western Producer 10 Feb

2000

Nielsen, R.L. (Bob). 2000. Transgenic crops in Indiana: short-term issues for farmers. ([Http://www.kingcorn.org/news/articles.00/GMO\\_Issues-000203.html](http://www.kingcorn.org/news/articles.00/GMO_Issues-000203.html))(originally published in the Chat'nChew Cafe, February 2000).

Oplinger, E.S., M.J. Martinka, and K.A. Schmitz. 1999. Performance of transgenic soybeans - Northern US. Presented to the ASTA Meetings, Chicago.

Sears, M. and A. Schaafsma. 1998. Responsible deployment of Bt corn technology in Ontario. [http://www.cfla-acia.agr.ca/english/plant/pbo/btweb2\\_e.html](http://www.cfla-acia.agr.ca/english/plant/pbo/btweb2_e.html)



**GrainWorld**

## **Panel Discussion: Genetically Modified Organisms: Reality, Perception and Marketing**

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**Presented to:**

**Grain World 2000**  
Winnipeg, Manitoba  
February 28, 2000



# Issues in Biotechnology

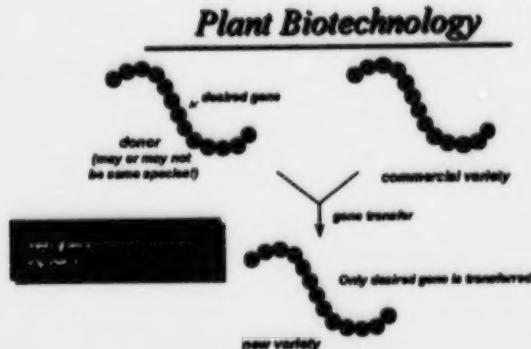
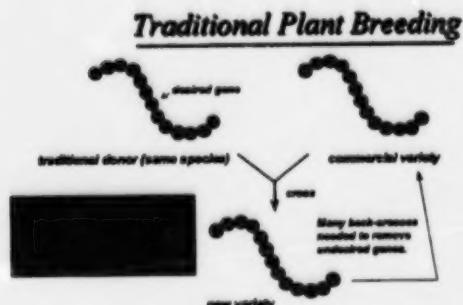
## By Lisa Jategaonkar

Biotechnology has recently been at the heart of many heated conversations both for producers and for consumers.

Biotechnology is an all-encompassing term that describes the use of any living thing, or its parts (e.g. proteins, DNA, fungus, bacteria), to make a product or to run a process. Examples of traditional biotechnology include using yeast to make bread, or using bacteria to make yogurt. Other examples of biotechnology include using a bacterial inoculant to supply nitrogen or a fungal inoculant to provide phosphorus for plants. DNA-based diagnostics are used to detect diseases in cattle and in food.

The area of biotechnology that appears to be generating the most attention, is the area of genetic modification that involves working directly with the DNA of a plant, animal or a microorganism. The DNA codes for particular characteristics in living things. Since DNA is universal among different living organisms it is possible to transfer the DNA, and as a result, to transfer a trait from one organism to another. When you breed plants, you are combining several plant genes; genetic modification allows for the specific transfer of known genes.

If you picture the genes as being beads along a string...



Modern biotechnology is a tool that you can use in farm management to combat challenges such as pests and weeds. It has the promise to add special characteristics for food processing, to increase nutrients, to decrease allergens, to produce vaccines and other commercially valuable substances from plants.

Currently, genetically engineered canola and soybean are modified to be tolerant to herbicides that would have normally killed the crop. These varieties provide new tools for weed management for producers.

There are also genetically modified varieties of corn and potatoes are resistant to attack from certain pests.

There has been rapid grower uptake of genetic modified crops.

### **Why Grower Uptake?**

Many growers are choosing genetically modified crops for the traits that they carry. Available traits include herbicide tolerance, (canola, soybean) and pest resistance (corn, potatoes) with the Bt trait.

Herbicide tolerance offers several advantages to producers. Firstly it offers improved weed control by broad-spectrum control of broadleaf and grassy weeds. An additional advantage is that producers can direct seed.

The genetically modified corn and soybean protect against harmful pests such as European Corn Borer, Colorado Potato beetle, which cause extensive economic losses.

Also, plant biotechnology is adding value to crops. Future biotech varieties on the markets may have additional consumer or processing benefits and farmers may be able to receive a higher return on these crops. Other research is developing heat tolerant canola and canola modified to be resistant to various pests.

### **Flexibility in Crop Management**

Farmers can choose which tools to use to meet the challenges they face. Growers will determine their own production costs to determine which varieties (GM or non-GM) are the best to grow, dependent on their weed pressures, soil, and climate.

## **Cost-benefit**

The bottom line to many is whether or not biotech crops are going to increase farm profits. In some cases, the cost of biotech seeds may be more expensive than traditional varieties. However, the biotech crop may offer advantages to the farmer such as more effective weed control or new pest control options. These advantages can lead to increased yield and reduced pesticide and herbicide costs. Most farmers use herbicide resistant canola in areas where weed pressures are high or in areas where there is a particular weed problem. This may vary farm to farm, region to region. The choice of whether to use these crops on the farm is up to the individual farmer to consider whether it results in better weed control or pest control.

## **What are some of the questions and concerns of producers?**

### **Outcrossing - Gene Transfer**

It is true that the pollen of genetically modified plants can outcross to nearby weeds or other plants. This occurs with both genetically modified and non-GM plants. In order to assess the impact of outcrossing, scientists ask the following questions: **What is the potential for outcrossing to occur?** Sound management practices can be used to minimize the risk of outcrossing. Environmental risk assessment extends beyond determining the possibility of gene flow to determine the consequences of gene flow. **What are the consequences if outcrossing does occur?** Does the gene provide a competitive advantage or make the plant more invasive to the environment? **Are there any other methods of control?** If a herbicide resistant trait were to transfer to a weed, the weed may become resistant to the herbicide. In that case, repeated herbicide application is a strong selection pressure that could result in a population of herbicide resistant weeds. In this case, another control method, such as different herbicide, will have to be used to control the weed.

### **Technology protection**

In order to protect the investment that went into developing the technology, some companies are investigating methods to prevent "brown-bagging" or saving seeds for following year.

Some seed companies currently secure technology with technology protection agreements. These agreements are legally binding documents. Not all companies require technology protection.

A new technology, called the Technology Protection System was patented last year that renders the seed of a subsequent generation sterile. It was nicknamed

the "terminator. It is important to note that the technology protection system has not been incorporated into any commercially available biotechnology seed.

Should the technology become commercially available, it is the growers who **will decide** whether to purchase seed with this technology only if they see a clear and obvious benefit. There is no use, or market, for the seed varieties with the terminator gene by itself. Technology protection must accompany an agronomic benefit such as an increase in yield. The agronomic benefits of the modified crop will need to warrant the additional input costs which result from not being able to save the seed.

### **Consumer concerns**

#### **Regulatory system**

Canada has a regulatory system in place to ensure the safety of foods. Health Canada and Canadian Food Inspection Agency share responsibilities to evaluate products on a case-by-case basis. The best scientific information available is used to develop regulations and guidelines, and these are continually revised, as new information becomes available. No one can give a 100% assurance of safety, but regulators can evaluate to determine whether the food is as safe as any other food on the market.

#### **Labelling Foods Derived from Biotechnology**

The Canadian regulatory system recognizes two forms of labeling, a mandatory labeling system and a voluntary labeling system. The mandatory labeling system in Canada is based strictly on the safety of the end product. If there were to be any deleterious effects caused by biotechnology to the final food product then the effect would have to be labeled. For example, if the process of biotechnology were to transfer an allergen to a food crop, or if it were to alter the nutritional quality, then the food would have to be labeled. The mandatory labeling law applies to all food products, not just those derived from biotechnology.

The second method of labeling is the voluntary labeling system. As the term suggests, companies can choose to label their food products with a voluntary label. Canada allows voluntary labeling of food products, so long as they are true and accurate. This system recognizes that consumers base their purchase choices on other factors beyond health and safety. For example, some consumers prefer to eat foods that are locally grown, foods grown in a particular country or foods that are organically grown. Some consumers comply with specific religious dietary restrictions; for example they can't eat anything that

contains pork or pork products. These labels do not recognize health and safety requirements; they provide information so consumers can base their choice on their individual values. People who wish to base their decisions on factors such as how the food is grown or cultural differences can choose products which have been voluntary labeled to reflect their values.

When a GM crop is determined to be safe for human health, then a decision to label the food as derived from biotechnology would be voluntary. So, why don't companies then choose or volunteer to label foods derived from biotechnology? After all, some individuals have argued, maybe consumers will have more faith in GM foods once they are labelled.

One of the main reasons is that the majority of biotech foods that are currently on the market are commodity crops such as canola, corn, and soy. Once these modified commodities obtain the necessary regulatory approvals they can be mixed with non-modified crops. As a result, all bulk commodities "may contain" GM food. Also, most GM are sold as ingredients in other processed foods in the form of corn sugar, soy proteins or canola oil and would be in low amounts in virtually every food. How do you label if it is an ingredient? How do you label if transgenic corn meal is fed to livestock? And, does a label that says "may contain" ingredients derived from GM crops really give the consumer enough information to make an informed decision?

Labeling also needs to be verifiable. Detection in the final food product is currently based on the ability to detect the unique DNA sequence that was transferred to make the crop GM, or an ability to detect the protein that is the product of the sequence. For some products such as canola oil, the protein and DNA are removed through processing, and the final product would be exactly the same as canola oil derived from non-GM. It is not possible with current detection methods to differentiate whether canola oil is derived from a GM crop or a non-GM crop.

In order to ensure that a product does not contain GM, commodities would have to be segregated from farm through distribution and at the processors. Of course, this is not impossible to do, but there would be increased costs associated with this. And that cost would end up being borne by the producer, the processor or the consumer. Most producers are choosing biotech crops because it offers agronomic benefits, yet the end product doesn't have any traits to justify an additional cost. This will likely change however, as biotech starts to develop crops with "output traits", traits such as processing modifications, enhanced nutrition, or other health benefits. With these crops, consumers will likely be willing to pay a higher amount for a quality trait.

Several practicalities, such as how to segregate, threshold levels for ingredients, and a label that provides adequate information to the consumer need to be

resolved before voluntary labeling begins. GM foods will continue to comply with mandatory labeling for health and safety.

### **Monarch Butterflies**

Recently in the popular press there have been reports that Bt corn, a corn variety made resistant to the European corn borer through genetic modification, will kill the monarch butterfly. The accusation stems from an article printed in the May 1999 edition of *Nature*, a leading scientific journal. In this laboratory study, researchers dusted moistened milkweed leaves with pollen that they had collected from both genetically modified Bt corn and non-Bt corn. They then compared the growth and mortality of monarch butterfly larvae. Three-day-old monarch caterpillars were placed on the leaves and allowed to feed for four days. The researchers found that 44% of the larvae that fed on the Bt-coated leaves died. The larvae that remained were less than half the size of larvae that fed on leaves with no pollen.

These experimental results were then extrapolated by reporters to be representative of field studies. Cornell University entomology professor Dr. John Losey who conducted this research commented when the *Nature* article was published: "Our study was conducted in the laboratory and while it raises an important issue, it would be inappropriate to draw any conclusions about the risk to monarch populations in the field based solely on these initial results."

Firstly, Monarch butterflies do not feed on corn, they feed on milkweed. However, corn pollen can travel by wind and land on milkweed. The proximity of milkweed to corn fields reduces the amount of contact that corn pollen will have outside the range of most pollen drift. In the experiment, caterpillars were given no choice but to feed on leaves dusted with corn pollen. In the field, caterpillars may move about to avoid ingesting pollen. Also, milkweed does not grow close enough to cornfields to be exposed to significant amount of pollen. For example an Iowa State study found that pollen density decreases by 70% by the edge of a cornfield and by 90% three meters way from the edge of the cornfield.

There is also a minimal overlap between monarch feeding and pollen shedding. Corn plants produce pollen for a short period of time; typically most pollen is produced in a given field over a 5-10 day period. Based on known migration patterns, only a small portion of the monarch population will be present when corn is shedding pollen.

The low overlap of pollen shedding and monarch feeding and the expected exposure level in a field setting indicates that the risk of endangering monarch butterflies is minimal. There are also several advantages from the use of Bt crops, including better protection from various pests such as the ECB and reduced pesticide use.

Dr. Losey also commented, "I still think the proven benefits of Bt corn outweigh the potential risks. We can't forget that Bt corn and their transgenic crops have a huge potential for reducing pesticide use and increasing yields."

Prior to Bt modified crops, farmers controlled ECB with conventional insecticide sprays that were toxic to the monarch butterfly as well as other non-target species. This technology offers many benefits to the producer, however, what about the potential risks to the environment? When considered in the context of current agricultural practices, the risk of a threat to the monarch butterfly is minimized.

### **Allergens**

Allergic reactions are due to the presence of specific proteins. If a gene coding for a known allergen were to be transferred, it would have to be labeled. Genetic modification may also be used to eliminate or reduce the levels of allergens in foods.

### **Antibiotic resistance markers**

In plants, antibiotic resistance genes isolated from bacteria can be used as markers during the early research stages to identify transformed plant materials. There is a concern that the antibiotic resistant gene markers may transfer from ingested plant material to bacteria in the human gut. The chance of antibiotic resistance genes transferring from the plant to bacteria in the human gut is very low because DNA is broken down in our stomachs as we eat. By comparison we eat trillions of plant genes daily. If gene transfer were to occur frequently, we would find many bacteria with many plant genes. This is not the case.

There is an increased chance of bacterial populations becoming resistant to antibiotics when there is a strong selection pressure. That is why there is concern about overuse of antibiotics in humans and animals. Selectable markers are evaluated for use genetic modification based on the following criteria, is the antibiotic an important medication?, what is the frequency of use of the antibiotic, is the antibiotic taken orally?, is there selection pressure for resistance to develop?, and is there already resistance to the antibiotic in bacterial populations? For example a commonly used antibiotic resistance marker is kanamycin resistance. This antibiotic is rarely used in the treatment of humans or animals.

Researchers are also looking at alternative selection methods to antibiotic resistant markers. Some varieties do not use antibiotic resistant markers.

## **Future Directions**

The future holds the potential for many consumer benefits: increased vitamins such as the golden rice which provides enhanced iron levels and Vitamin A, a decrease in allergens, processing properties, and vaccine production. On the farm, genetic modification will continue to help producers meet challenges by providing new methods of protection against disease, pests, and weeds and by providing tolerance to heat, cold, drought and other environmental stressors.

Contact:

Lisa Jategaonkar at [lisa.j@agwest.sk.ca](mailto:lisa.j@agwest.sk.ca)

## **Panel Discussion: Genetically Modified Organisms: Reality, Perception and Marketing**

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**Presented By:**

Angus McAllister  
Research Director  
Environics International Ltd.  
Toronto, Ontario

**Presented to:**

Grain World 2000  
Winnipeg, Manitoba  
February 28, 2000



# GM Foods in Canada: Overview

- Why Care About Public Opinion?
- Current Issue Status
- Drivers of GM Acceptance vs. Rejection
- Future Issue Trajectory
- Concluding Observations

## Starting Point: Why Care About Public Opinion?

- In free market: The customer is never wrong.
- In democracy: Public acceptance = "licence to operate."
  - HFCs, slowpoke reactors, energy-from-waste
- What if the public is completely ignorant?
  - Ignorant " Ignoring.  
- P = R.
- Still need their permission / Know what they don't want.
- But they are being emotional?
  - Same as above.
  - Food is all about emotion.

# Key Notions

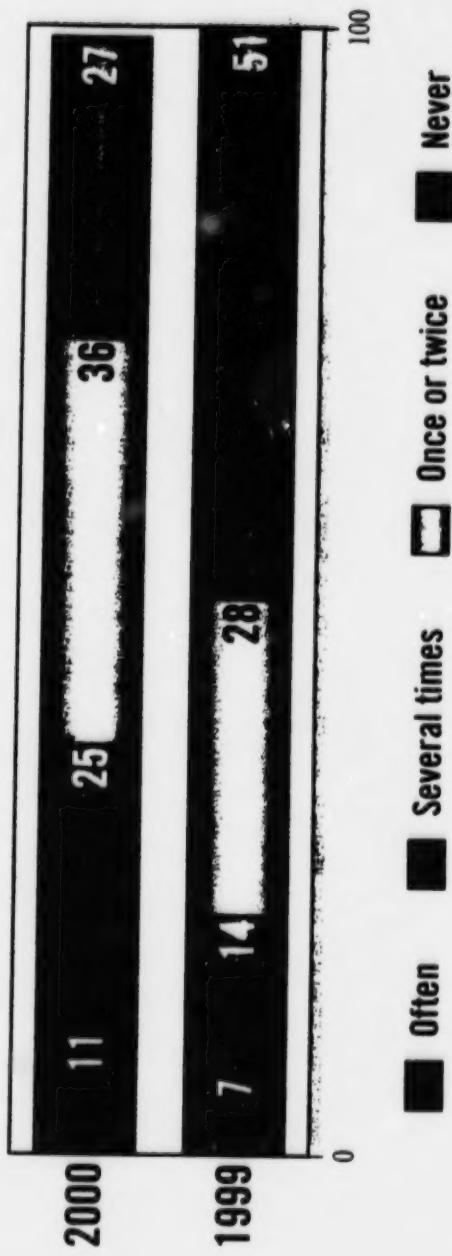
- Three key stages of public opinion:
  1. Basic Awareness - seeking sensation
  2. Paying Attention - seeking information
  3. Passing Judgment - seeking resolution
- Canadian public now starting to “pay attention.”
  - Very much seeking information
  - Assessing credibility / balance
- Taking a precautionary stance = leaning negative.

# Discussed Biotechnology 1999-2000



The Environmental Monitor

2000

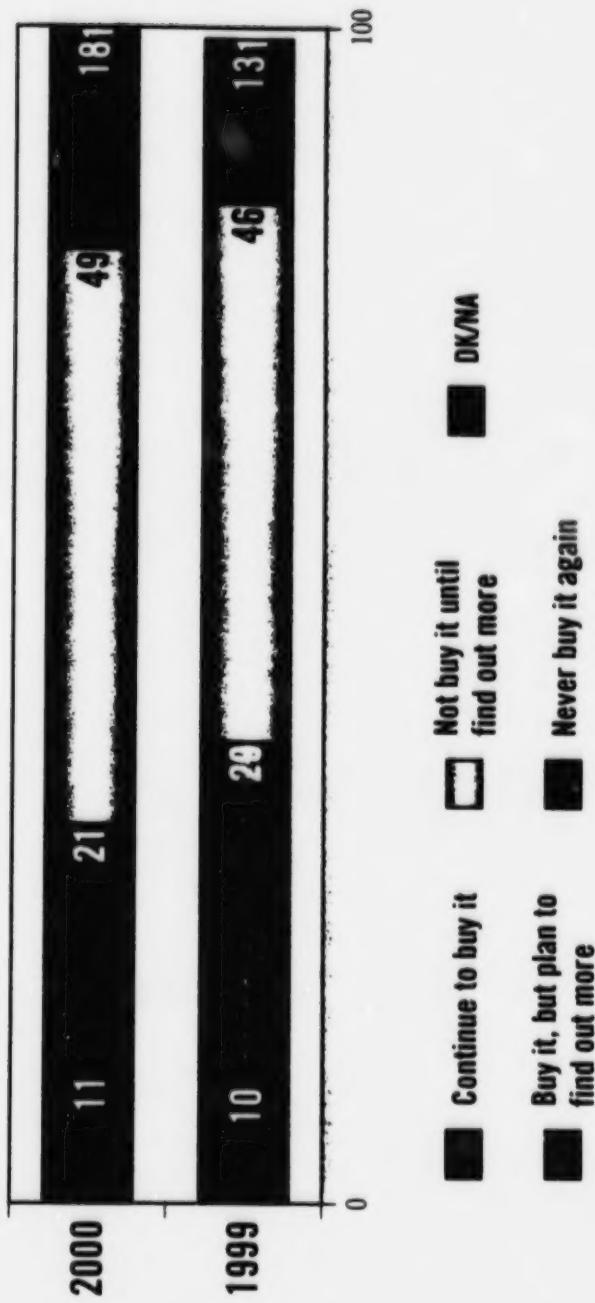


# Reaction to Labeling of GM Food Product

2000

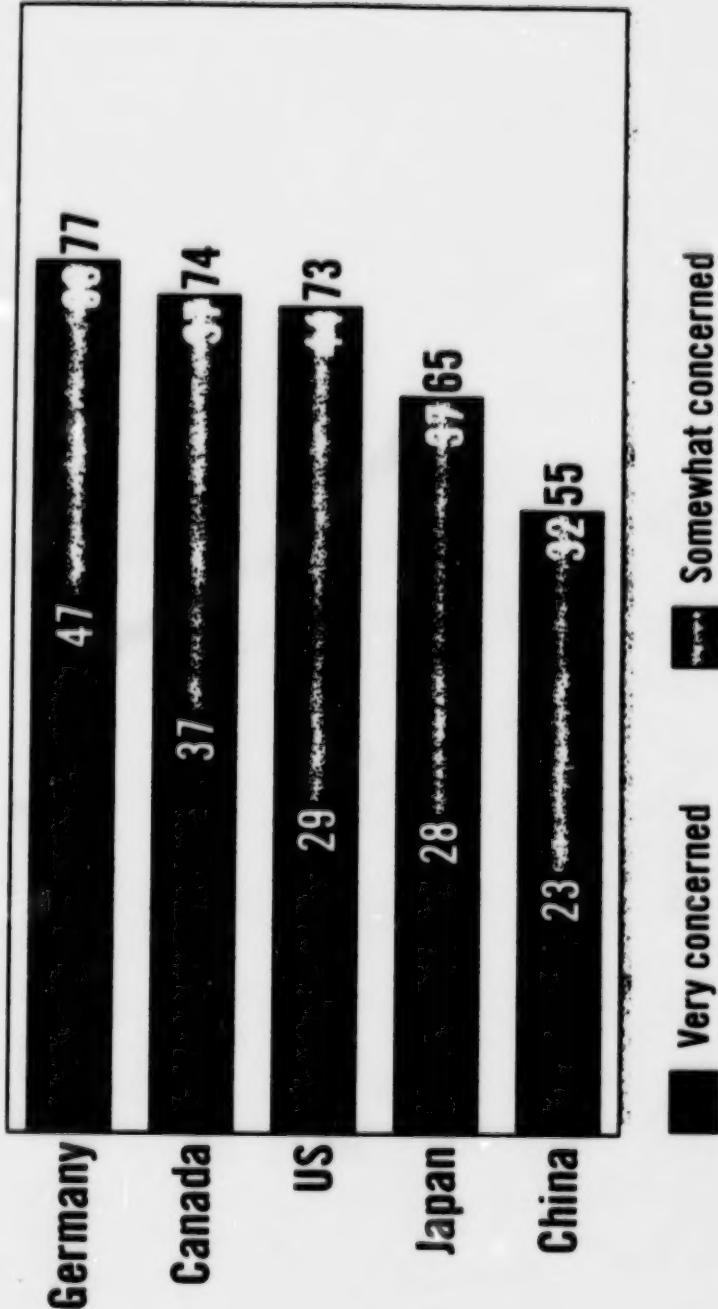


The Environmental Monitor



## Concern Over Genetically Engineered Foods

1999



## DRIVERS OF ACCEPTANCE:

### 3 Questions Consumers Ask of New Tech...

① Do we have a choice?

- INVOLUNTARY vs. VOLUNTARY Adoption

② What's so good about it?

- What's in it for SOCIETY vs. What's in it for ME?

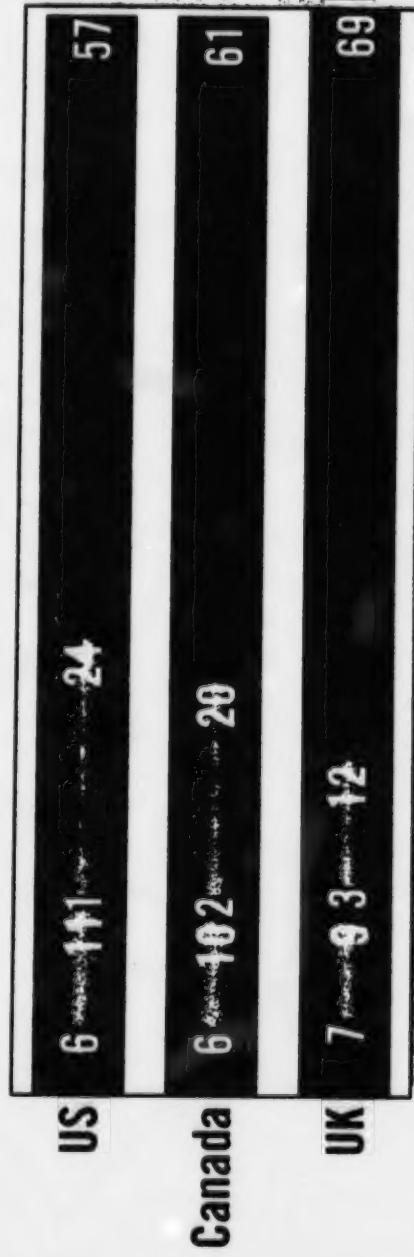
③ Why should I believe you?

- Cuz WE say so vs. Check it out for YOURSELF

# Special Labeling of GM Foods Not Necessary



1999



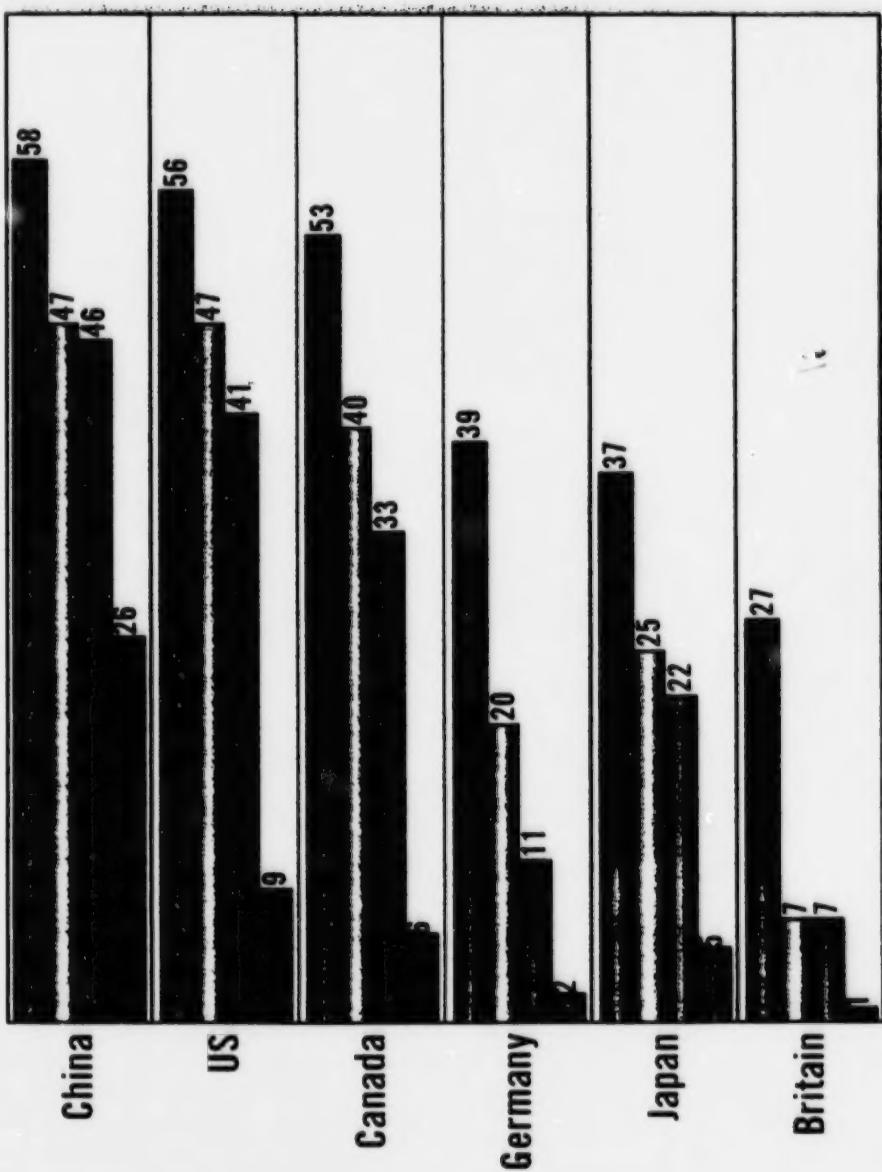
Legend:  Strongly agree  Somewhat agree  OK/NA  Somewhat disagree  Strongly disagree



# Applications of Biotechnology

## "Strongly Favor"

1999



## ISSUE TRAJECTORY

### Focus of issue will evolve through....

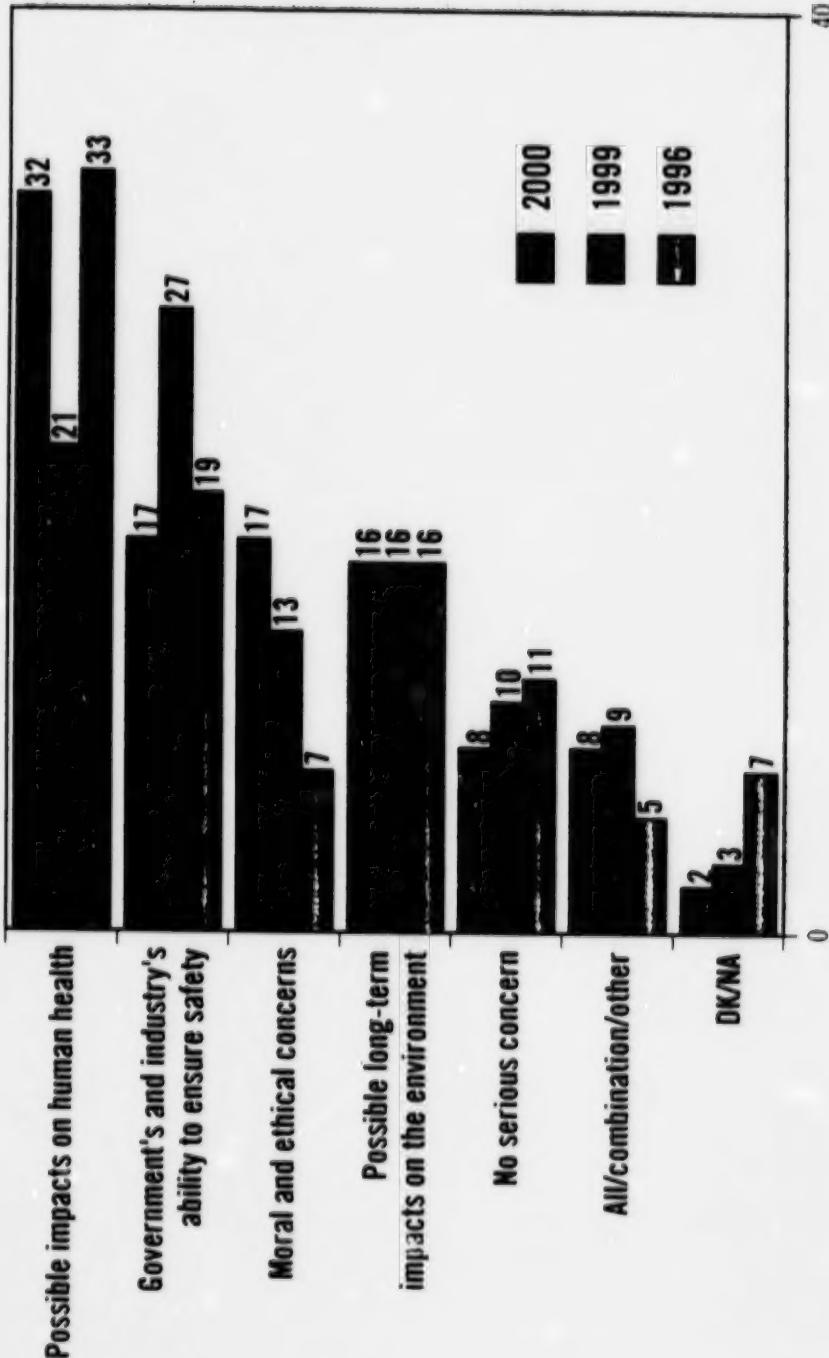
- Consumer choice
  - Key audience = all
- Health risks vs. benefits
  - Key audience = older boomers, matures
- Environmental risks vs. benefits
  - Key audience = younger & educated Canadians
- Credibility of the Regulatory System
  - Key audience = all



The Environmental Monitor

# Greatest Concern About Biotechnology 1996-2000

2000



## GM Foods: Concluding Remarks

- Canadians are split, but leaning negative.
- Issue to get hotter; not likely to go away.
  - Global issues drive the local agenda, not vice versa.
- Resolution via:
  - Increased knowledge, moving through engagement.
  - Understanding direct consumer benefits.
  - Demonstrated accountability / transparency on safety issues.
- Sympathetic: Gen-Xers (GM = newest high tech job opp.)
- Unsympathetic: Older female boomers (GMs = additive).
- Fundamentally about emotion/values, not just facts.



## **Panel Discussion: Genetically Modified Organisms: Reality, Perception and Marketing**

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**Presented By:**

William Hill  
Managing Director Merchandising and  
Transportation Services  
UGG  
Winnipeg, Manitoba

**Presented to:**

Grain World 2000  
Winnipeg, Manitoba  
February 28, 2000

## Marketing GMO Products

Thank-you Mr. Chairman. Good morning Ladies and Gentlemen. I would like to thank you for giving me the opportunity of participating in this panel discussion today dealing with what I think is one of the most important issues facing agriculture today.

Before talking about the current situation regarding the marketing of GMO products, I think it is useful to review the rationale behind the implementation of Biotechnology in agriculture.

Biotechnology has the potential to revolutionize conventional seed breeding and to improve the quality, health, and functionality of plant products. Initially traits were introduced into existing plant species that improved the agronomic traits for farmers: herbicide tolerance, pest resistance and increased yield. The benefits of these initial applications accrued directly to farmers with little short-term benefit to consumers of the products.

This initial introduction of technology also has two major long-term indirect benefits to consumers. As can be seen from the following graphs world population is predicted to grow at a greater rate than the current trend in food production. In addition rising world income will continue to put pressure on world food supply. Biotechnology has the potential to increase the overall world food supply in the face of an increasing world population. It also can reduce chemical use by farmers by reducing the number of chemical applications necessary to control weeds, or by producing insecticide within the plant as opposed to applying it on the plant. These longer-term indirect benefits of increasing total food production and reducing chemical use were largely overlooked in the initial marketing of the technology. A technology that provides these benefits combined with downstream traits that have the potential to improve the quality and health aspects of food could contribute greatly to society as a whole. These benefits are also consistent with the objectives of many of the current opponents to GMOs.

Eventually downstream traits will be introduced that will focus on the improvement of grains and oilseeds based on consumer and processor demand. Such traits could include a modified fatty acid profile in oilseeds,

enhanced Vitamin A in rice, or improved oil content in corn.

These new traits will be tailored to individual markets and will carry premiums to cover any additional costs associated with bringing these products through a specialty merchandising channel; or there will be a wholesale conversion to a particular trait, as was the case with the conversion of Rapeseed to Canola.

The intention of the initial introduction of GMO technology was to produce a product that was not different from its non-GMO predecessor. The initial GMO products, which carry improved agronomic performance traits, were intended to fit seamlessly into the existing marketing channel.

Direct benefits of the technology accrue overwhelmingly to farmers in the form of improved agronomics. Benefits to the food industry and the consumer were to be an equivalent product at an equivalent price. As was the case with hybrid corn, a reduced cost to the farmer will in the longer-term increase productivity and thus stabilize prices for the consumer.

It was expected the farmer would be free to select the technology that is best suited to their individual agronomic circumstances without causing repercussions in the markets they serve. Whether that seed technology is nonGMO, GMO or enhanced IP GMO.

The issues surrounding the marketing of GMO products relate directly to the uncertainty in the minds of consumers over the safety of the technology itself.

Proving that something is safe is very difficult especially if the product involves technology that is new and complex and if the safety has to be proved over an extended period of time into the future. There is a risk associated with the unknown. When people are asked to accept a risk, no matter how small, and there is no immediate need or benefit associated with that risk, there is bound to be resistance to accept the change.

In the recent past we experienced exceptional harvests worldwide. This increase in supply occurred at a time when demand was reduced as a result of the Asian crisis, leading to an oversupply of grains and oilseeds, driving

grain prices to their lowest levels in more than a quarter of a century. It is difficult to convince the public of the necessity to increase the food supply at a time of record high carryout and record low prices.

Food safety issues have moved to the forefront in many consumers' minds, especially in the EU, as a result of the mad cow disease and dioxin scare. Consumers have lost a degree of confidence in the ability of governments worldwide to provide assurances as to the safety of food.

Globalization is occurring at a rapid rate putting pressure on trade practices, health and safety standards, subsidies for agriculture and the autonomy of individual governments.

There is a growing distrust and concern over the involvement of the large integrated multinational companies in the world food supply. Many of these same companies hold the rights to GMO technology.

The result has been a growing concern over the safety of biotechnology in food production at a time when GMO production is growing at a very rapid rate. This concern has manifested itself in varying degrees, depending on the countries and the products involved. These actions range from an outright ban of products from particular countries - Canadian Canola in Europe; to labeling of GMO products in some countries - the UK; to banning the production of certain GMO products in some countries - soybeans in Brazil.

The issues surrounding the marketing of GMO products revolve around the issue of consumer choice. Since governments cannot satisfy concerns over the safety of GMO products it is suggested that the consumer should be given the choice of whether or not to consume them. The two central issues over choice are labeling and testing. Quality control for grain products, particularly at the country and terminal elevator level, is conducted quickly and efficiently using visual and timely mechanical testing. There is no timely and reliable way to test for GMO products. The only way to ensure that products are GMO free is through a rigidly controlled identity preserved (IP) system.

The grain industry worldwide is based on a highly efficient system dependent on moving large volumes of homogeneous product at a very low cost. To overlay onto this an IP system that requires rigid quality control where product identification is meticulously traced from the time planting seed is sold until the final product is packaged will add substantial cost to the end product. Each arrow in the attached slide indicates a point where testing would have to be carried out as product is shifted from one player in the logistics chain to another. In addition to the costs associated with the slowing of product through the system, the introduction of sophisticated and costly testing and auditing procedures at all stages of this process will add further costs to the final product.

The processed and prepared food & feed markets require a consistent product at a low cost. This has led to a consolidation of this industry into large-scale grain and oilseed processing facilities. These facilities are geared to large consistent quantities of inputs. Switching products between GMO and non-GMO products adds considerably to their cost structure.

Further complications arise from the fact that GMO product offers a direct benefit to the grower at the same time that it demands the same price as non-GMO product in many markets. This encourages the farmer to continue to produce the product.

The end result is that consumers wishing to purchase non-GMO product will pay premiums in the same way that consumers of organic grain pay higher prices for products grown without the use of chemicals. These premiums will be equal to the costs of IP and the agronomic benefit forfeited by farmer by not growing GMOs.

Labeling is the other issue related to marketing GMO products. The degree of labeling required, in terms of the number of products that must be labeled, and the tolerances allowed for compliance with the labeling requirements will have a direct bearing on the cost associated with providing non-GMO product. The first will add costs due to the cost of the actual labeling itself, for example, number of products, size of label etc. The tolerances set for labeling will impact costs by determining the degree of rigidity necessary to make the necessary claims on the label and the degree of risk associated with complying. Larger tolerances mean less cost.

As marketers it is our responsibility to satisfy our customer needs in the most efficient way possible. If consumers demand a choice then it is our responsibility to provide them with that choice.

The degree to which we can fulfill that need is dependent upon the constraints of the labeling requirements and the amount of premium the consumer is willing to pay for the extra cost of IP.

The degree to which the farmer will continue to grow GMO product will depend on the amount of benefit he derives from the agronomic traits inherent in the product and the degree to which the spread between GMO and non-GMO encourages him to grow GMO.

Given the likely environment for labeling and world supply it is highly unlikely that any significant amount of non GMO product will be segregated in western Canada.

As enhanced end-user traits are added to the GMO lineup, premiums will develop in the marketplace for these enhanced traits as buyers begin to pay for a direct benefit of GMO technology either because these products lower the cost or enhance the value of the product.

The debate over labeling and safety will continue. New and more innovative ways will be developed to use the technology. Testing techniques will be developed that will increase their speed and accuracy while lowering their overall cost. Whatever the outcome over the debate about safety, the consumer will be the one to decide. They will weigh the costs and benefits, the risks and the rewards and will make the ultimate decision. In the meantime it is our responsibility as marketers to provide the customer with the product he demands in the most efficient manner as possible.

Thank-you



## **Wheat Outlook**

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**Presented By:**

**David Boyes**  
Market Analyst, Latin America and the Caribbean  
CWB  
Winnipeg, Manitoba

**Presented to:**

**Grain World 2000**  
Winnipeg, Manitoba  
February 28, 2000

## **World Wheat and Durum Wheat Outlook**

### **Grain World 2000 - February 28, 2000**

David Boyes  
Market Analyst  
Market Analysis  
Canadian Wheat Board

#### **Introduction - Wheat**

The world wheat market continues to be one summarized by large supplies and lower than average prices. The past four years have seen very large wheat crops produced by all the major exporting nations. These recent large production levels have overshadowed the fact that demand for wheat has remained very strong. In addition, large supplies among the major exporters have further constrained the ability of prices to move upward. Consequently, prices have been trending lower, and 1999-00 was no exception.

In 2000-01, consumption will continue to exceed demand, as it did slightly in 1999. Stock levels will be drawn lower as a result, supporting the market and leading to moderate price level recoveries.

#### **Analysis and Forecasts**

At the CWB, based on our analysis of worldwide wheat area developments and weather impacts on crops so far, we do not expect world production in 2000-01 to be substantially lower than that of 1999-00. We are currently forecasting a wheat crop of 583 million tonnes (MT), still a large crop by historical standards and above the latest five-year average (581 MT).

Wheat production remains high worldwide because of the impact of policy decisions in the case of some major producers and exporters (e.g., the European Union (EU)) and the lack of alternative attractive-return crops to grow in the case of others (e.g., Australia, Argentina).

We are forecasting that wheat production in the 15 countries of the EU (EU-15) will rebound by over 6% in 2000-01, to almost 103 MT. EU-15 soft wheat acreage is estimated to have expanded by almost 5% due to reductions in oilseed production subsidy payments to EU farmers and overall lower oilseed prices.

On the other hand, U.S. winter wheat acreage is the lowest since 1972, and U.S. Soft Red Winter (SRW) and Hard Red Winter (HRW) yields are expected to be well below 1999-00 levels. We are therefore forecasting a 7.5% decline in U.S. wheat production, to about 58 MT.

Chinese wheat production is expected to fall due to lower acreage as a result of lower domestic prices and a move by the Chinese government to encourage production of higher-quality wheats, thereby discouraging acreage in southern and northeastern areas.

Despite a return to trend yields, Western Canadian all-wheat production is expected to remain flat as producers expand spring wheat and durum wheat acreage at the expense of lower-return oilseeds. Area that wasn't sown due to flooding last spring will also contribute to higher acreage.

Australian and Argentine wheat acreage is expected to remain steady. At 38.7 MT, combined 1999-00 Argentine/Australian production was the second highest on record (1996 - 39.5 MT).

We are forecasting that in 2000-01 for the third year running, total world wheat consumption will outstrip total world production. World ending wheat stocks are forecast to be drawn down to much lower levels than in the previous two years.

World ending wheat stocks were 135 MT at the end of 1998-99; by the end of 2000-01 we are forecasting they will be only 115 MT. This is a relatively low level of ending wheat stocks historically. When ending stocks are expressed as a percentage of total annual consumption of wheat in the world for that year (the "stocks/use ratio"), the ratio is only 19%, which is the lowest in recorded history. It is certainly fair to say that the world wheat supply-and-demand situation shows the potential of tightening up substantially by the end of 2000-01, which is friendly to wheat prices. A particularly negative aspect of global wheat stocks is that they are concentrated among the five major exporting nations. The degree of price recovery will be a function of the eventual size of the 2000-01 wheat crop and then of the actual level of world wheat consumption in 2000-01, the latter a very difficult factor to forecast.

World wheat trade was 97 MT in 1998-99, and is forecast to be 103 MT this year and then to drop back to 100 MT in 2000-01 based on lower forecast imports by a number of major importing countries.

We are forecasting at this stage that Canada will produce 26.6 MT of wheat in 2000-01, giving us a total supply similar to the previous year at about 34 MT.

We forecast Canadian 2000-01 exports at 18.4 MT. The CWB will take exports higher if opportunities materialize but this is our "realistic" assessment. The market environment is one in which total wheat trade is forecast to drop by 3 MT, the major exporters collectively have big exportable stocks. The export marketing of wheat is expected to remain very competitive in 2000-01.

These estimates will leave Canada with 7.3 MT of wheat stocks at the end of 2000-01, equal to the five-year average.

### **Introduction - Durum Wheat**

The durum wheat market in 1999-00 managed to return higher prices to producers than bread wheat, despite larger seeded area in countries like the U.S. and Australia. Bad weather at harvest in both countries reduced both the quantity and the quality of their durum crops, rescuing the market from potentially enormous supplies.

A very important new aspect of the global durum wheat market is the fact that the supply side is undergoing a significant structural shift. The emergence of several new low-cost suppliers of durum wheat (Australia, Turkey, Syria and Mexico) could soon account for up to 20 per cent of durum wheat trade, and this level could still increase.

The durum wheat market is always difficult to forecast in February because major importing countries have not yet harvested their durum crops, and major exporters have not yet seeded theirs. The CWB's view at this time is that 2000-01 will see larger area planted again to durum wheat in all major producing regions, pressuring prices below current levels. Poor returns for wheat and other alternative crops will encourage increased plantings. Minor exporters continue to make their presence felt. Australia for example has increased its durum production by over 400 per cent since 1995.

### **Analysis and Forecasts**

US durum wheat production is expected to expand 0.5 MT to 3.2 MT despite slightly lower acreage. North Dakota harvested acreage fell dramatically in 1999 due to poor harvest weather and abuse of the Crop Revenue Coverage (CRC) insurance program, and yields were over 30 per cent below trend. The CRC limitations for durum wheat production this spring will eliminate acreage in eastern areas, although acreage will come back into production in the main durum wheat region after last spring's flooding.

Australian durum wheat acreage is expected to remain high in 2000, and quality is expected to recover substantially after two very poor harvests in 1998 and 1999. Australian durum wheat production has expanded by over 400 per cent just between 1995-1999.

EU durum wheat production had been expected to expand mostly as a result of a larger Spanish harvest after last year's drought in Andalucia, Spain's main durum region, although acreage is also estimated to be slightly higher in Italy and France. However, production prospects are now starting to fade in Andalucia, as a result of dryness since November.

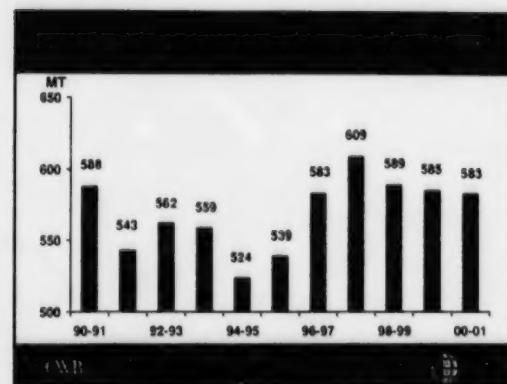
North African production is expected to recover after last year's serious drought in Morocco. Harvest will begin by early May, and yield prospects are fading after a good start in Morocco and good December rainfall in Algeria. The production forecast shown here could drop considerably if dryness persists.

Production is expected to recover in Syria after last year's significant drought. Mexican reservoir levels for the desert durum wheat crop in northwest Mexico are higher than they were a year ago.

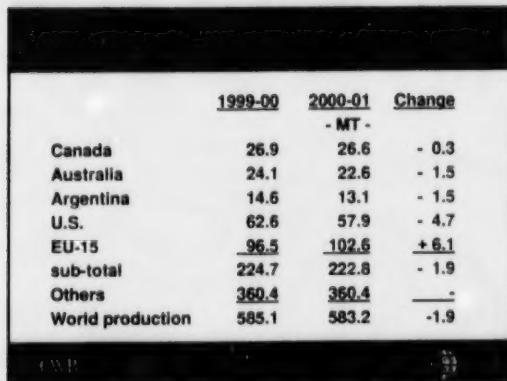
Western Canadian durum wheat acreage could expand by up to 40 per cent in 2000-01 as farmers respond to higher durum wheat prices relative to spring wheat, as well as poor oilseed returns. This could boost production to 5.1 MT, compared to 4.3 MT in the previous year. An expansion of this magnitude, combined with normal weather, would have a negative effect on prices. This With steady domestic use, this will result in Canadian durum exports of 3.8 MT. Canada's durum wheat stocks will increase by 0.2 MT to 1.7 MT by the end of 2000-01.



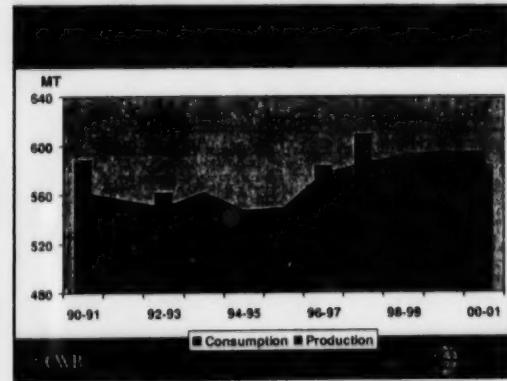
CWR



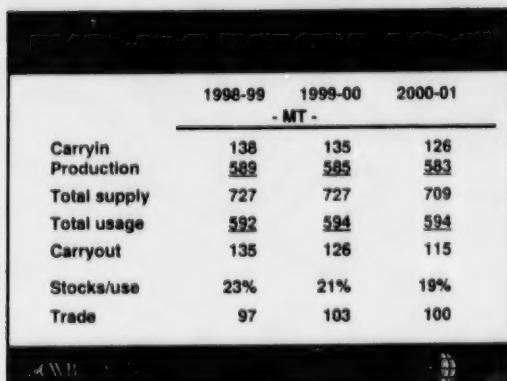
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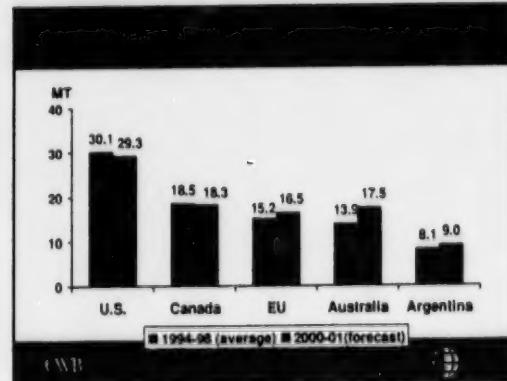
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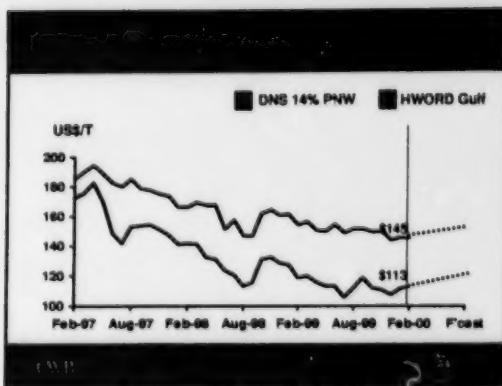
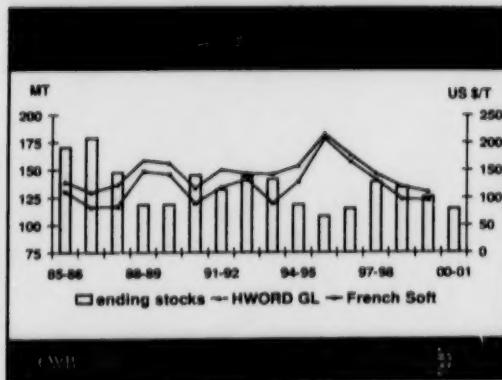
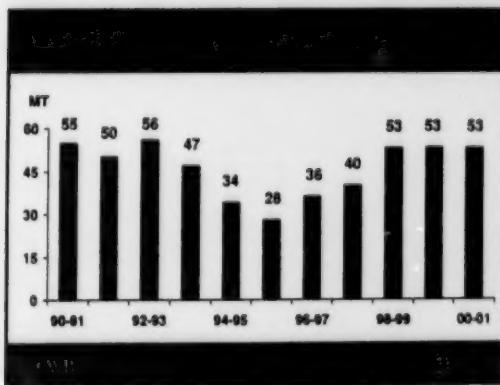
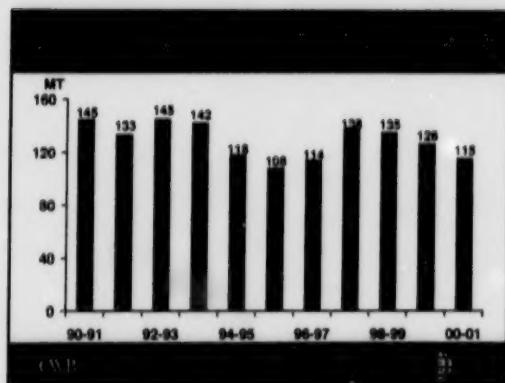
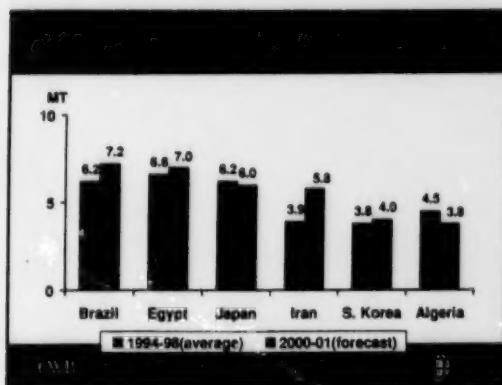
CWR



CWR



CWR



1998-99 1999-00 2000-01

MT

	1998-99	1999-00	2000-01
Carrying Production	6.0	7.3	7.4
Total supply	24.1	26.9	26.6
Domestic use	8.1	8.4	8.3
Exports	14.7	18.4	18.4
Carryout	7.3	7.4	7.3

Legend: CWP

## WORLD WHEAT MARKET OUTLOOK

- 4th largest world wheat crop (585 MT)
- Prices pressured downward due to 3rd-largest world wheat supplies on record (720 MT) and large supplies among major exporters
- Wide price spread between medium- & high-quality wheat; high protein premiums
- World wheat ending stocks forecast to drop by 9 MT to 126 MT
- Stocks/use ratio forecast to decline 1.6% to 21.3%
- Iran, Egypt and Brazil to be largest importers

CWB

## WORLD WHEAT MARKET OUTLOOK

- ◆ Wheat production expected to be down in 2000 at 583 MT
- ◆ Wheat consumption also steady at 594 MT
- ◆ World wheat trade forecast down to 100 MT
- ◆ Ending stocks to drop by 10 MT to 115 MT, 3rd-lowest level in 18 years
- ◆ Carryout stocks among major exporters to drop by 700,000 T in 2000-01
- ◆ Stocks/use ratio to drop to 19.4% (19.7% in 1995-96)
- ◆ U.S. wheat belt remains dry

CWB

## WHEAT MARKET OUTLOOK

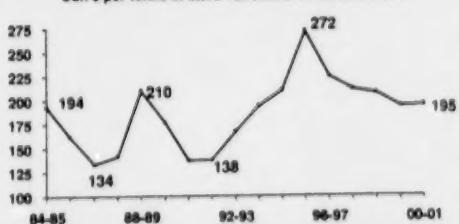
Cdn \$ per tonne in store Vancouver or St. Lawrence (midpoints)

	1998-99 Actual returns	1999-00 Feb PRO	2000-01 Feb PRO
1CWRS 13.5	208	194	195
1CWRS	184	170	173
1CPS Red	162	152	159
1CPS White	156	151	157
1CWRW	170	157	161
1CWES	183	164	166
1CWSWS	155	154	156

CWB

## WHEAT MARKET OUTLOOK

Cdn \$ per tonne in store Vancouver or St. Lawrence



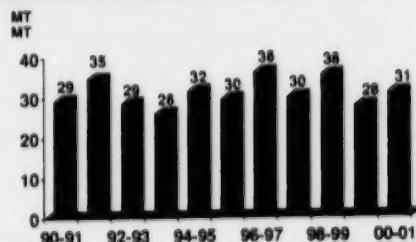
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## WHEAT MARKET OUTLOOK

WHEAT MARKET OUTLOOK

CWB

## WHEAT MARKET OUTLOOK



CWB

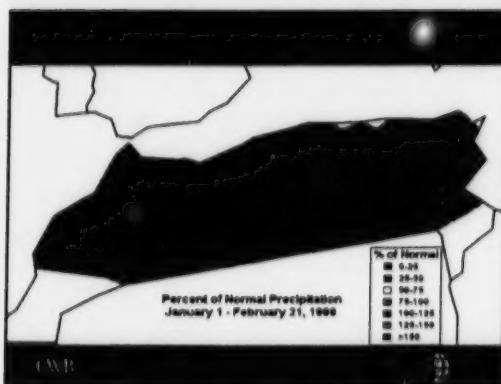
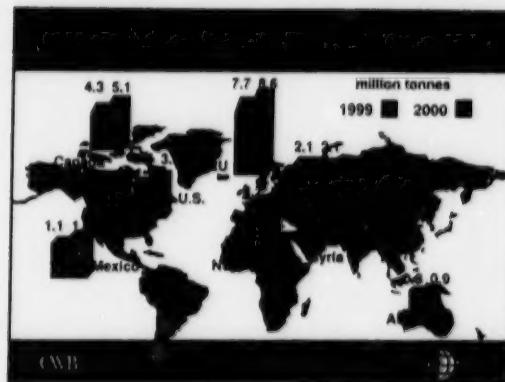
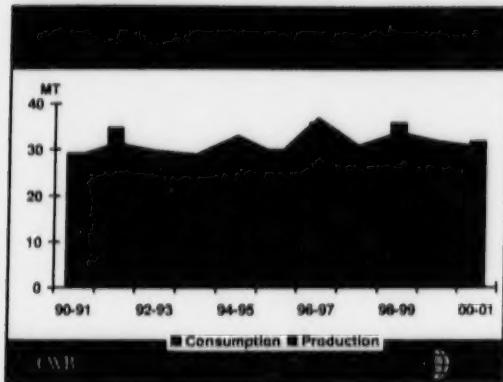
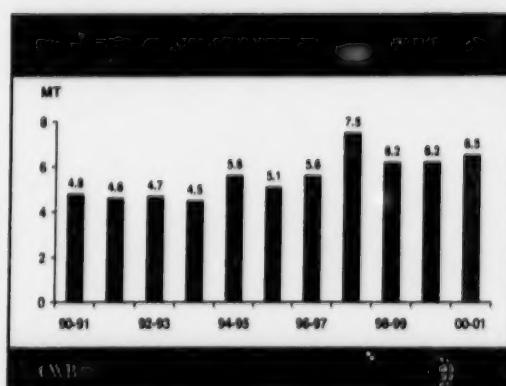
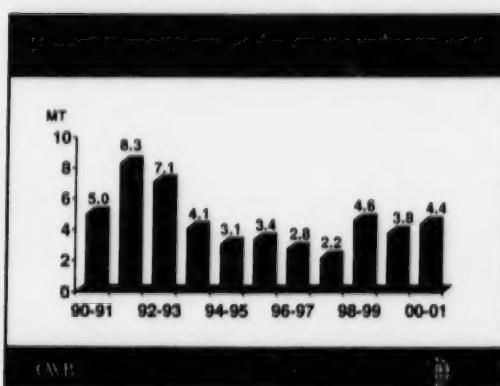
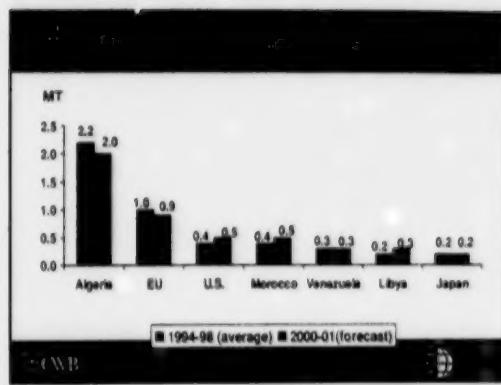
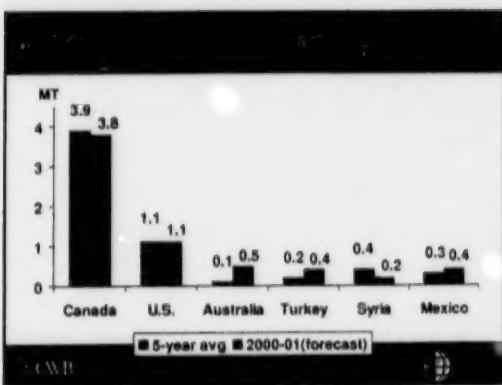


Table of wheat supply and usage data for 1998-99, 1999-00, and 2000-01.

	1998-99	1999-00	2000-01
Carryin	2.2	4.6	3.8
Production	35.6	27.8	31.3
Total supply	37.8	32.4	35.1
Total usage	33.2	28.6	30.7
Carryout	4.6	3.8	4.4
Stocks/use	13.8%	13.2%	14.3%
Trade	6.2	6.2	6.5

Legend: 1998-99 (white bar), 1999-00 (black bar), 2000-01 (white bar)

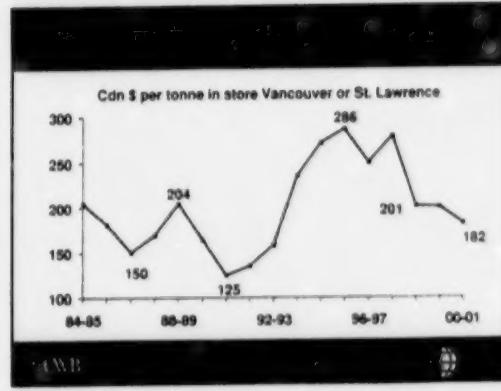


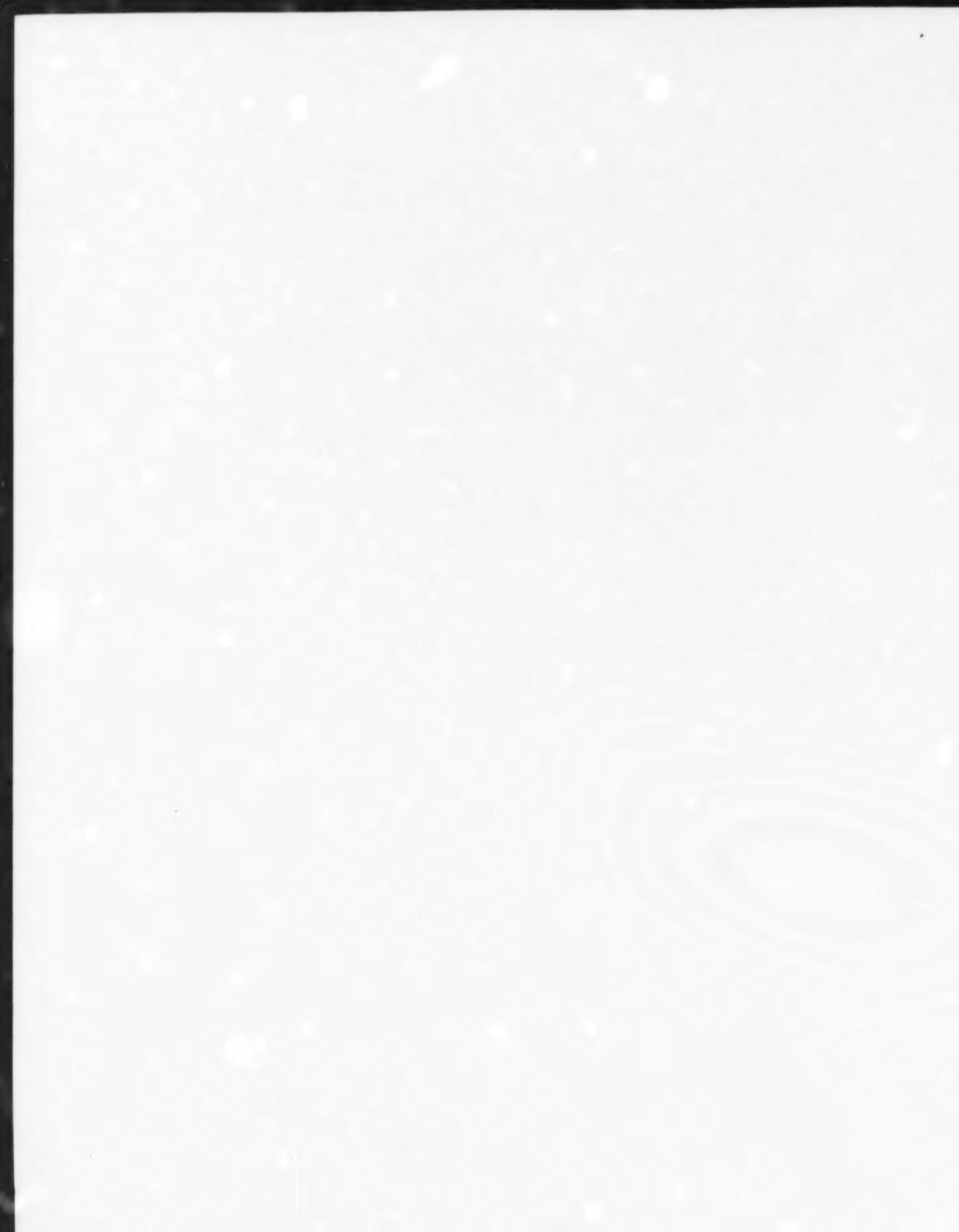


	1998-99	1999-00	2000-01
	- MT -		
Carryin	0.8	2.0	1.5
Production	6.0	4.3	5.1
Total supply	6.8	6.3	6.6
Domestic use	1.0	1.1	1.1
Exports	3.8	3.7	3.8
Carryout	2.0	1.5	1.7

- World durum wheat production forecast to increase by 13%
- Production in North America is expected to increase by 19%
- Increased competition from minor durum wheat exporters
- World import demand expected to remain strong
  - However
- Crops in Europe and North Africa harvested in May-June
- Durum crops in North America not yet seeded
- Based on current forecasts/assumptions, have to expect lower durum wheat prices in the upcoming year

Cdn \$ per tonne in store Vancouver or St. Lawrence (midpoints)			
	1998-99 Actual returns	1999-00 Feb PRO	2000-01 Feb PRO
1CWAD 13.0	210	214	196
1CWAD	201	200	182
2CWAD	193	193	175
3CWAD	183	175	162
4CWAD	158	154	—







The Canadian Wheat Board

# pool return outlook

**DATE:** February 28, 2000

99-00/26

**RELEASE:** Immediate

## WHEAT STABLE, DURUM DOWN IN NEW CROP OUTLOOK

**Winnipeg** - The CWB today released its first Pool Return Outlook (PRO) for the 2000-2001 crop year. Wheat and feed barley values are expected to be similar to the 1999-2000 crop year. Durum and designated barley returns are expected to fall because of larger anticipated production.

	<b>February PRO</b> <b>2000-2001</b>	<b>February PRO</b> <b>1999-2000</b>
<i>- Cdn \$ per tonne in store Vancouver or St. Lawrence -</i>		
<b>Wheat</b>		
No. 1 CWRS 13.5	\$180 - 210	\$184 - 204
No. 1 CWRS 12.0	162 - 192	166 - 184
No. 1 CWRS	158 - 188	160 - 180
No. 2 CWRS 13.5	176 - 206	180 - 200
No. 2 CWRS	156 - 186	157 - 177
No. 3 CWRS	147 - 177	145 - 165
No. 1 CPSR	144 - 174	142 - 162
No. 1 CPSW	142 - 172	141 - 161
No. 1 CWRW	146 - 176	147 - 167
No. 1 CWES	151 - 181	154 - 174
No. 1 CWSWS	141 - 171	144 - 164
CW Feed	116 - 146	116 - 136
<b>Durum</b>		
No. 1 CWAD 13.0	181 - 211	199 - 229
No. 1 CWAD	167 - 197	185 - 215
No. 2 CWAD	160 - 190	178 - 208
No. 3 CWAD	147 - 177	160 - 190
<b>Feed Barley</b>		
No. 1 CW	119 - 149	118 - 148
<b>Designated Barley</b>		
SS CW Two-Row	169 - 199	180 - 200
Std. Sel. Two-Row	164 - 194	175 - 195
SS CW Six-Row	154 - 184	177 - 197
Std. Sel. Six-Row	149 - 179	172 - 192

**Note:** PROs are the CWB's estimates of crop year returns. These forecasts are early and assume normal growing conditions in 2000. Unusual weather in importing or exporting countries and other changes in market conditions could dramatically affect the price forecasts. Farmers who use PROs to make seeding decisions are advised to watch for the March and April updates before finalizing their plans. PROs are not price guarantees and should not be confused with initial payments. PROs may be adjusted monthly, up or down, to take into account changes in weather, exchange rates, supply and demand and other market fundamentals in importing and exporting countries.

-more-

Corporate Communications, 423 Main St., P.O.Box 816, Stn. Main, Winnipeg, MB Canada R3C 2P5, Phone (204) 983-3421 Fax (204) 983-4678

### **PRO Commentary**

#### **Wheat**

Initial estimates show that new crop wheat returns in 2000-2001 will be similar to current 1999-2000 levels for higher grade and higher protein CWRS wheat and slightly higher for lower grade and mid-quality wheat types. World wheat values are expected to remain flat to slightly higher as no significant reduction of major exporter stocks is anticipated in the year ahead. Protein premiums are expected to decline relative to this past year, partly on the anticipation of higher protein levels in the U.S. hard red winter wheat crop and a return to normal North American spring wheat crop conditions. Global wheat trade is projected to decrease to 100 million tonnes in 2000-2001, compared to 103 million tonnes in 1999-2000. World wheat production in 2000-2001 is expected to be similar to the current marketing year. With lower carry in supplies in 2000-2001, and similar usage levels, global ending stocks are projected to decrease to 115 million tonnes in 2000-2001 from 126 million tonnes in 1999-2000. The anticipation of a stronger Canadian dollar partly offsets the modest gains projected for wheat market values.

#### **Durum**

Durum PROs are down significantly from current 1999-2000 levels. World durum production is expected to increase from 27.8 million tonnes in 1999-2000 to 31.3 million tonnes in 2000-2001. Although importing countries are expected to have larger crops, most of the 3.5 million tonne increase is accounted for in exporting countries; which would increase major exporter stocks. Total trade in 2000-2001 is expected to be slightly higher than the current year. If current dry conditions across North Africa prevail into the next two months, importer production will fall and demand will increase from current projected levels. Other newer exporters, especially Australia, which has increased acreage the past two years, are expected to increase their presence in global durum trade in the upcoming year. The supply side of the global situation is changing structurally with more new exporters becoming continuous exporters. The levels of northern U.S. and western Canadian durum acreage and production will have a significant impact on price levels through the 2000-2001 pool year.

#### **Feed barley**

The feed barley PRO for 2000-2001 is similar to the current projected value for 1999-2000. Production levels in most major barley producing areas such as the European Union (EU), Eastern Europe, the Former Soviet Union, Australia, U.S. and Canada are expected to increase by six million tonnes compared to 1999-2000. Demand is expected to fall slightly with world trade in feed barley projected at around 12.3 million tonnes down from 12.5 million tonnes in 1999-2000. Although western Canada is expected to increase planted area, production is forecast to be only slightly higher than in 1999-2000 because of lower expected yields. Canada's exports in 2000-2001 will likely continue to be modest due to a growing domestic feed market. However, Canadian domestic feed barley demand is highly dependent on the eventual grade pattern of other crops, especially wheat.

#### **Designated barley**

The new crop designated barley PROs are down \$6 for two-row- and \$18 for six-row designated barley from current 1999-2000 values. World import demand (mainly two-row) is expected to be slightly stronger in 2000-2001, but a recovery in malting barley acres in western Canada, Australia, and EU are expected to increase supplies and reduce values from current levels. An expected larger area and production in the U.S. will likely reduce six-row barley values compared to 1999-2000 unless quality problems arise. The EU's use of export subsidies for feed barley is always the major factor affecting price levels for feed and malting barley. Although unpredictable, we expect EU export subsidies to be reduced as part of their WTO commitments.

The following table shows the PRO values in **Cdn \$ per bushel** in store Vancouver or St. Lawrence.

	<b>February PRO 2000-2001</b>	<b>February PRO 1999-2000</b>
<b>Wheat</b>		
No. 1 CWRS 13.5	\$4.90 - 5.72	\$5.01 - 5.55
No. 1 CWRS 12.0	4.41 - 5.23	4.52 - 5.06
No. 1 CWRS	4.30 - 5.12	4.35 - 4.90
No. 2 CWRS 13.5	4.79 - 5.61	4.90 - 5.44
No. 2 CWRS	4.25 - 5.06	4.27 - 4.82
No. 3 CWRS	4.00 - 4.82	3.95 - 4.49
No. 1 CPSR	3.92 - 4.74	3.86 - 4.41
No. 1 CPSW	3.86 - 4.68	3.84 - 4.38
No. 1 CWRW	3.97 - 4.79	4.00 - 4.54
No. 1 CWES	4.11 - 4.93	4.19 - 4.74
No. 1 CWSWS	3.83 - 4.65	3.92 - 4.46
CW Feed	3.16 - 3.97	3.16 - 3.70
<b>Durum</b>		
No. 1 CWAD 13.0	4.93 - 5.74	5.42 - 6.23
No. 1 CWAD	4.54 - 5.36	5.03 - 5.85
No. 2 CWAD	4.35 - 5.17	4.85 - 5.66
No. 3 CWAD	4.00 - 4.82	4.35 - 5.17
<b>Feed Barley</b>		
No. 1 CW	2.59 - 3.24	2.57 - 3.22
<b>Designated Barley</b>		
SS CW Two-Row	3.68 - 4.33	3.92 - 4.35
Std. Sel. Two-Row	3.57 - 4.22	3.81 - 4.25
SS CW Six-Row	3.35 - 4.01	3.85 - 4.29
Std. Sel. Six-Row	3.24 - 3.90	3.74 - 4.18

#### *Abbreviations*

CWRS	Canada Western Red Spring
CPSR	Canada Prairie Spring Red
CPSW	Canada Prairie Spring White
CWRW	Canada Western Red Winter
CWES	Canada Western Extra Strong
CWSWS	Canada Western Soft White Spring
CWF	Canada Western Feed
CWAD	Canada Western Amber Durum
CW	Canada Western
SS	Special Select

#### *Metric Conversions*

Wheat	One tonne = 36.744 bushels
Barley	One tonne = 45.930 bushels

# *GrainWorld*

## **Coarse Grains Outlook**

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**Presented By:**

Ron Gibson  
Senior Vice-President  
R. J. O'Brien and Associates Inc.  
Calgary, Alberta

**Presented to:**

Grain World 2000  
Winnipeg, Manitoba  
February 28, 2000

# World Coarse Grain Outlook

Ron R. Gibson, Senior Vice President

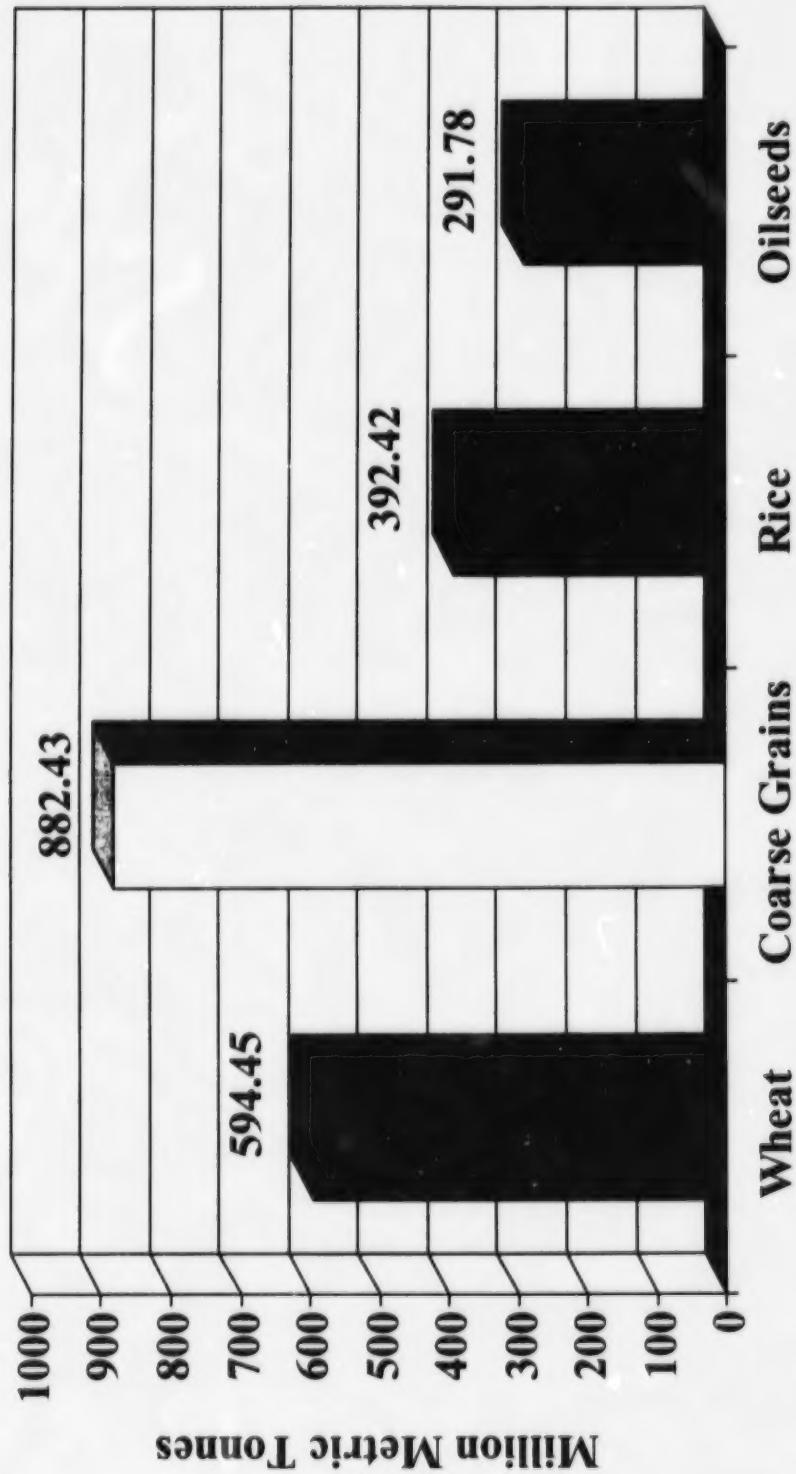
R.J. O'Brien & Associates, Inc.

*GrainWorld*

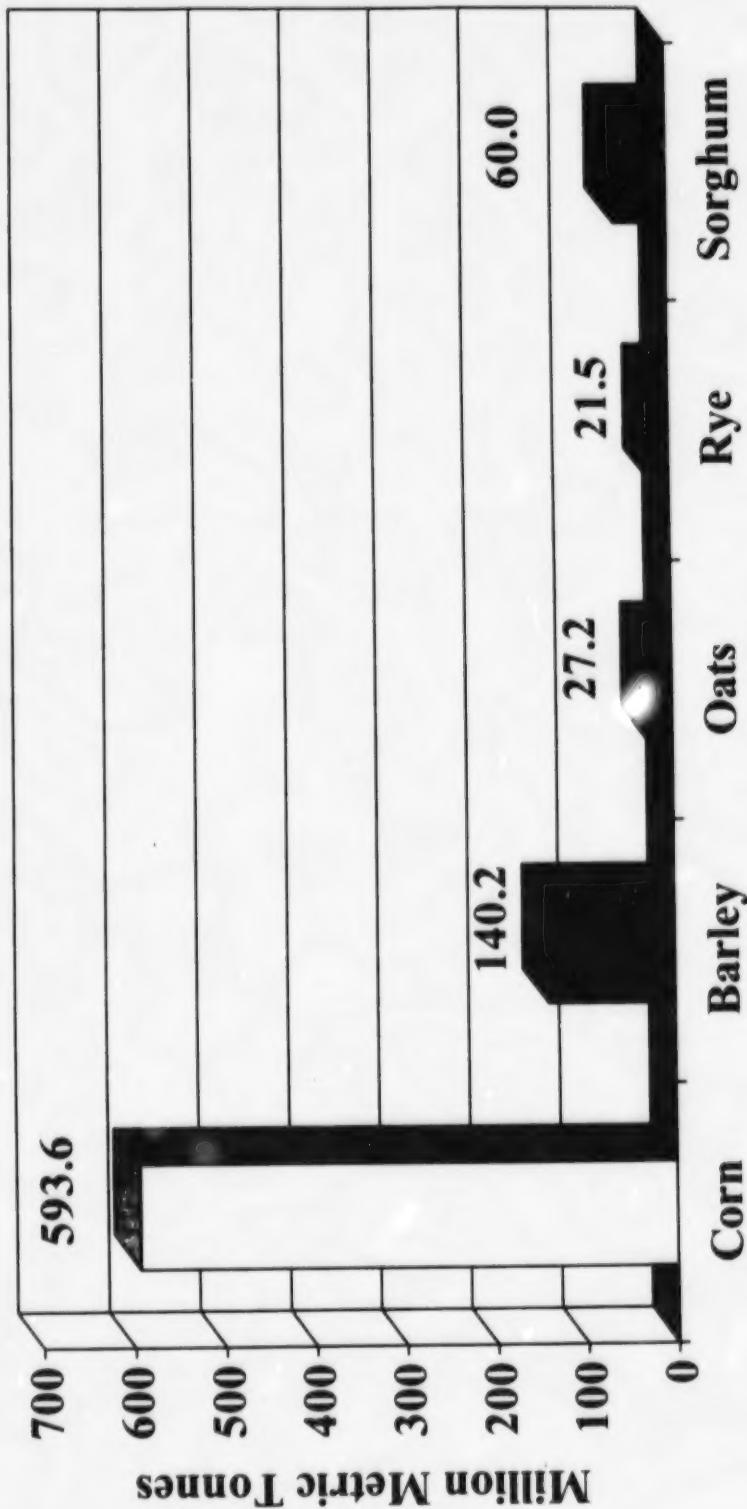


February 27-29, 2000  
Winnipeg, Manitoba

# World Production: 97/98 to 99/00

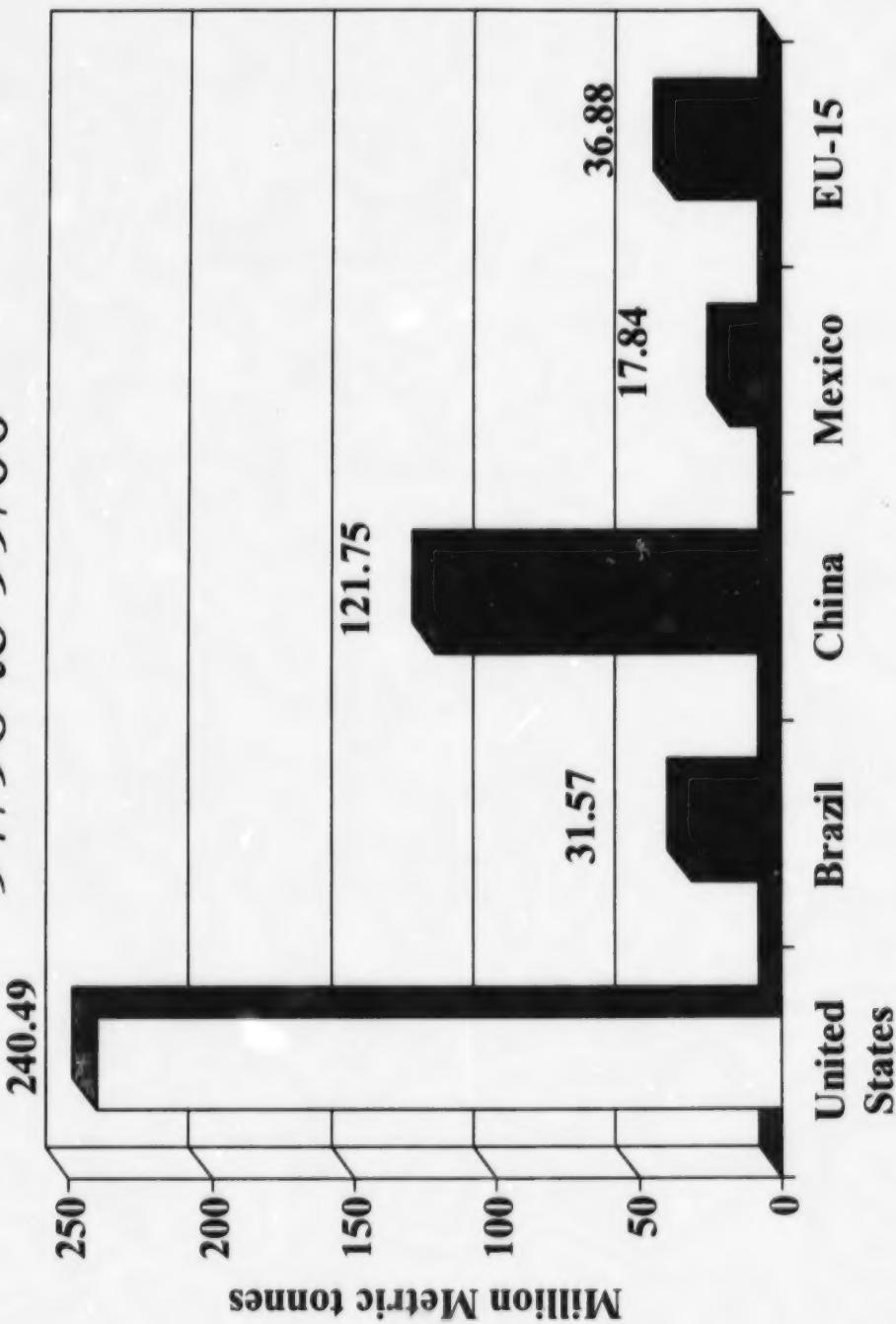


# World Coarse Grain Production: 97/98 to 99/00



# Major Corn Producers:

97/98 to 99/00



# Major Corn Exporters: 97/98 to 99/00

(Million Metric Tonnes)



■ United States □ Argentina ■ China □ S. Africa □ Other

# Major Corn Importers: 97/98 to 99/00

(Million Metric Tonnes)



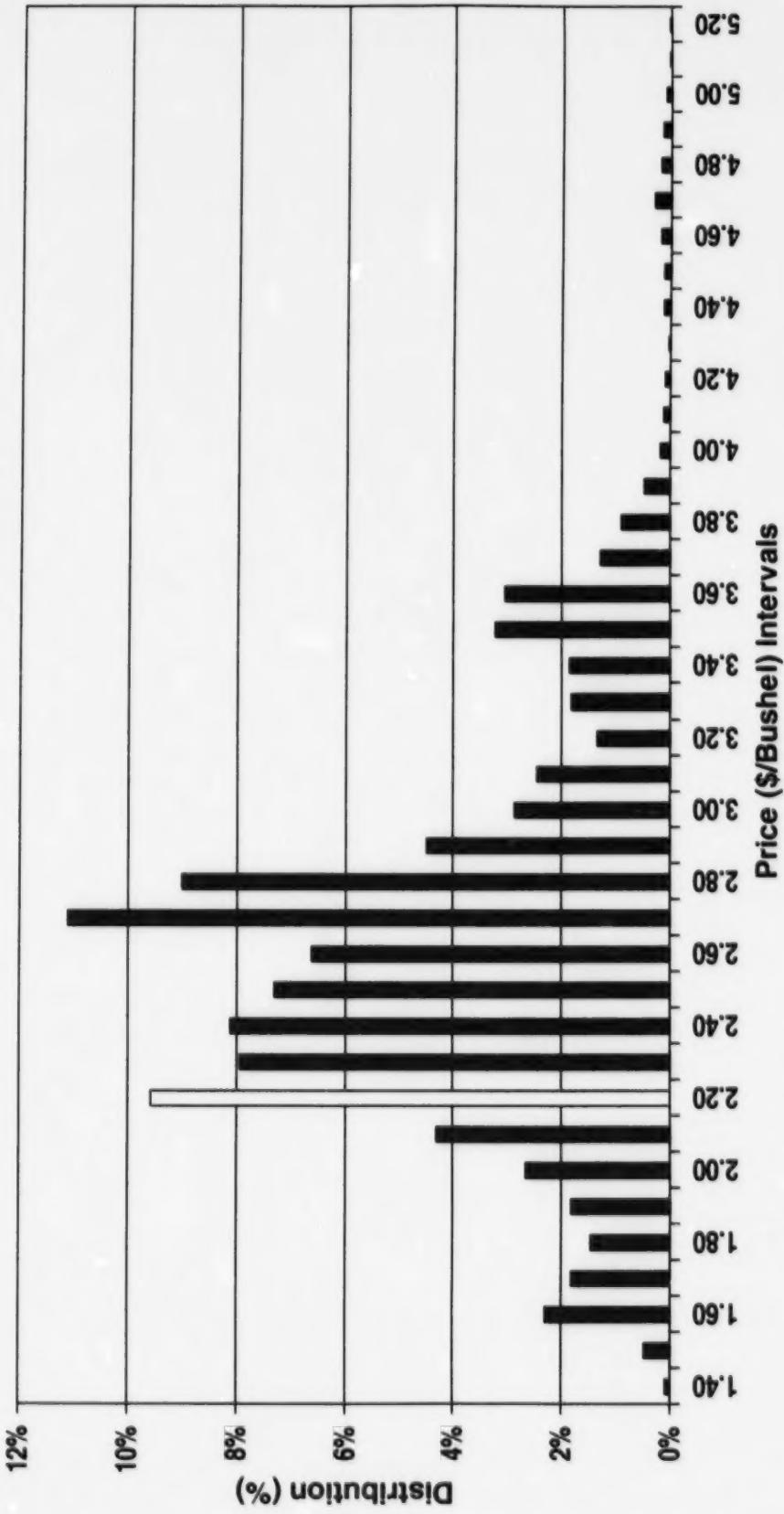
■ Egypt ■ Japan ■ S. Korea ■ Malaysia □ Mexico ■ Taiwan □ Other



# World Coarse Grain Supply/Demand

CROP YEAR	AREA HARVESTED (Mha)	YIELD (MMt)	PRODUCTION (MMt)	IMPORTS (MMt)	EXPORTS (MMt)	DOM FEED USE	DOM TOTAL USE	ENDING STOCKS (MMt)
95/96	313.34	2.56	802.86	102.44	108.26	548.7	842.23	97.79
96/97	322.15	2.82	908.19	105.20	107.57	577.6	877.36	128.63
97/98	310.99	2.84	883.50	98.98	100.00	583.3	876.00	136.12
98/99	308.88	2.88	890.66	108.88	106.72	577.0	870.97	155.81
99/00	303.62	2.88	873.14	109.56	113.58	577.1	880.77	148.18
00/01 <sup>1/</sup>	303.50	2.88	874.00	100.00	100.00	580.0	885.00	137.00

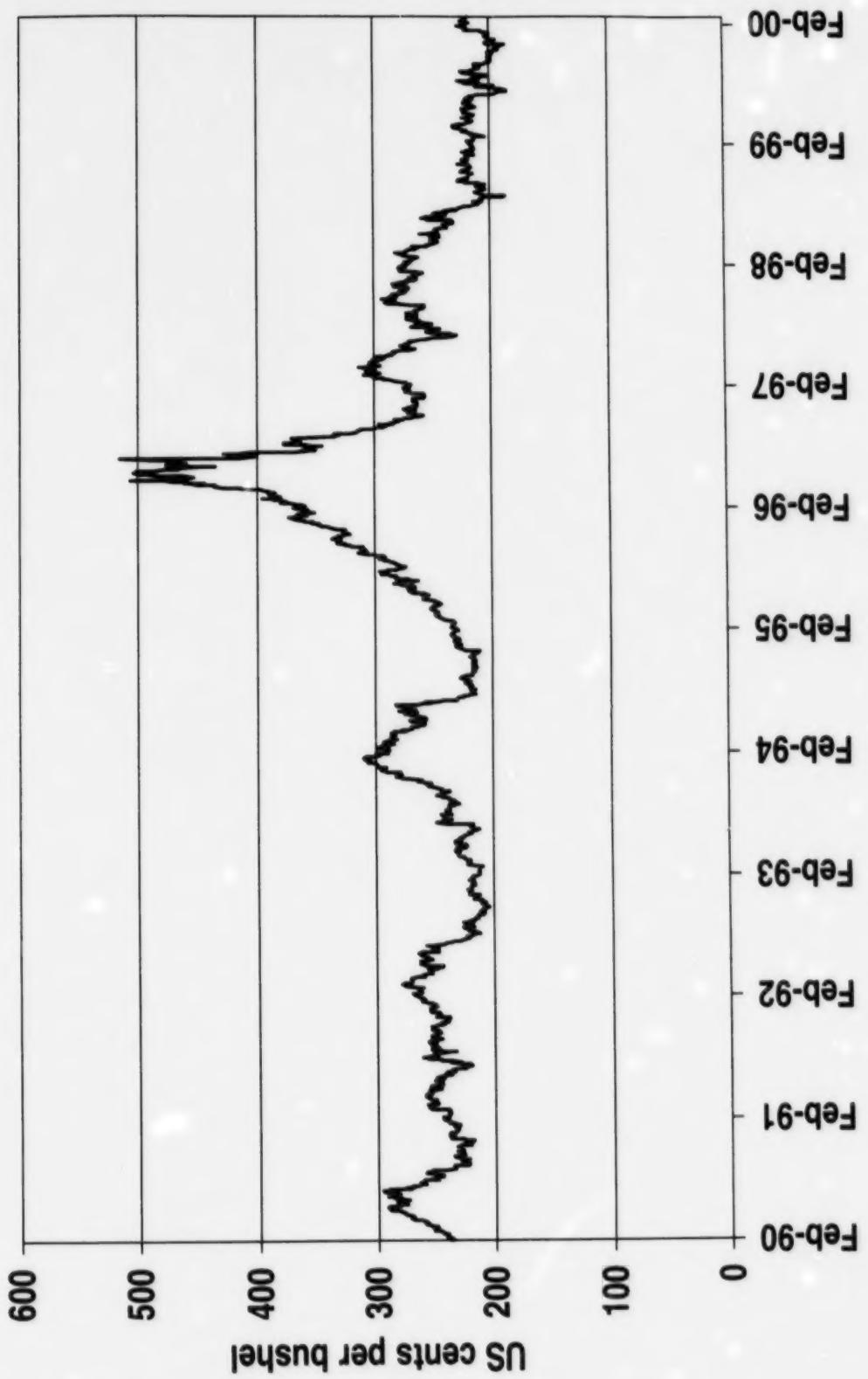
## Distribution of CBOT Corn Nearby Futures Prices: January 1, 1980-January 31, 2000



Note: Nearby Futures prices switches to the next nearby futures contract on the first day the contract expires. A price interval of \$2.50 indicates the price range greater than \$2.45 and less than or equal to \$2.55.



# Nearby CBOT Corn Futures



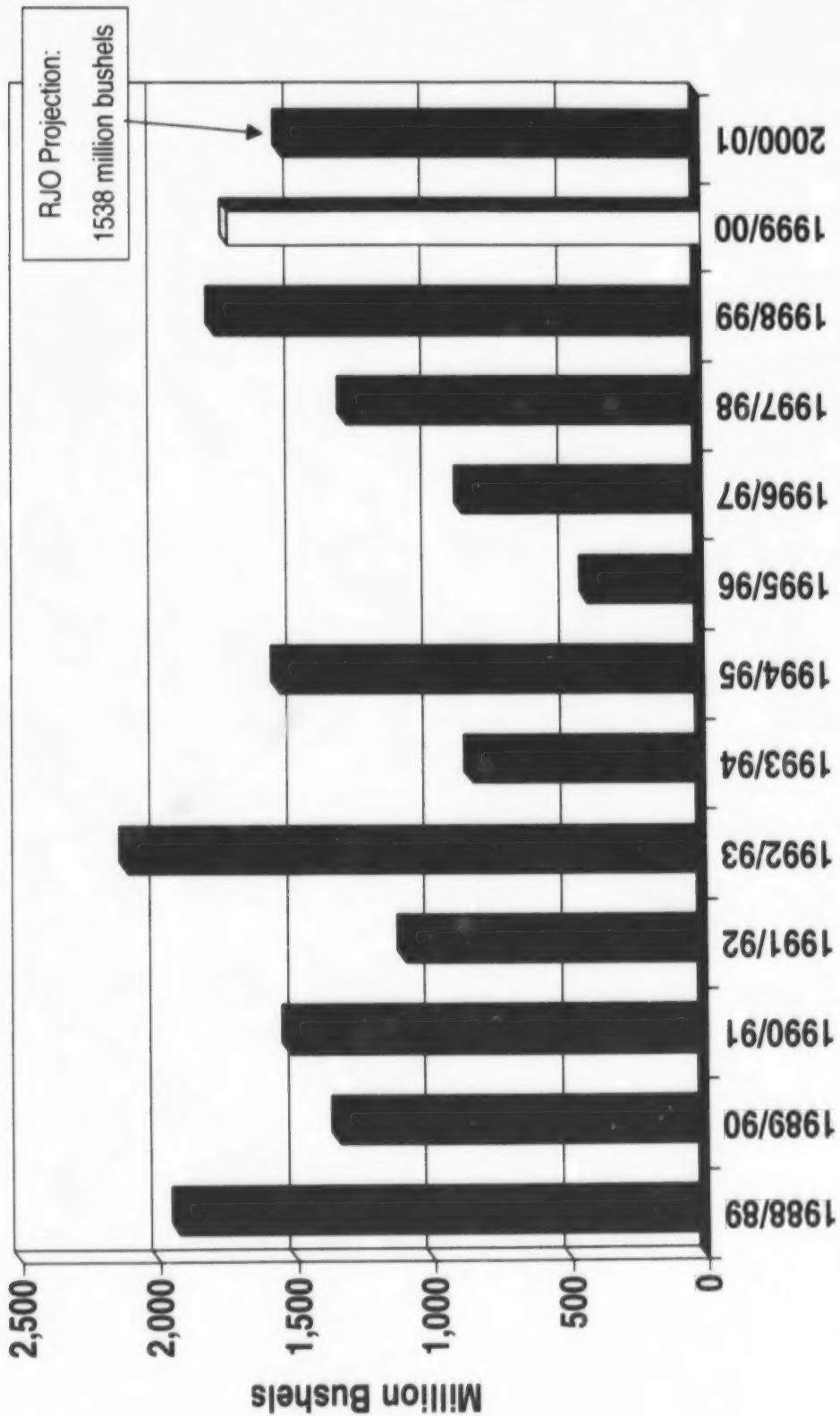
# US Corn Supply/Demand (Million Bushels)

CROP YEAR	Acres Harvested (M acres)	Yield (bu/acre)	PROD	TOTAL	Domestic Use	Exports	TOTAL	ENDING STOCK
88/89	55.25	84.6	4929	9191	5232	2028	7260	1930
95/96	65.21	113.5	7400	8974	6320	2228	8548	426
96/97	72.64	127.1	9233	9672	6992	1797	8789	883
97/98	72.67	126.7	9207	10099	7287	1504	8791	1308
98/99	72.59	134.4	9759	11085	7308	1981	9298	1787
99/00	70.54	133.8	9437	11239	7550	1950	9500	1739
00/01 1/	70.224	120.0	8,427	10,225	7350	1900	9250	975
00/01 1/	70.224	133.0	9,340	11,138	7600	2000	9600	1538
00/01 1/	70.224	140.0	9,831	11,629	7750	2050	9800	1829

Source: USDA

1/ RJO Projections

# US Corn Ending Stocks



Source: USDA

# Impact of U.S. Non-Recourse Loan and LDP Programs

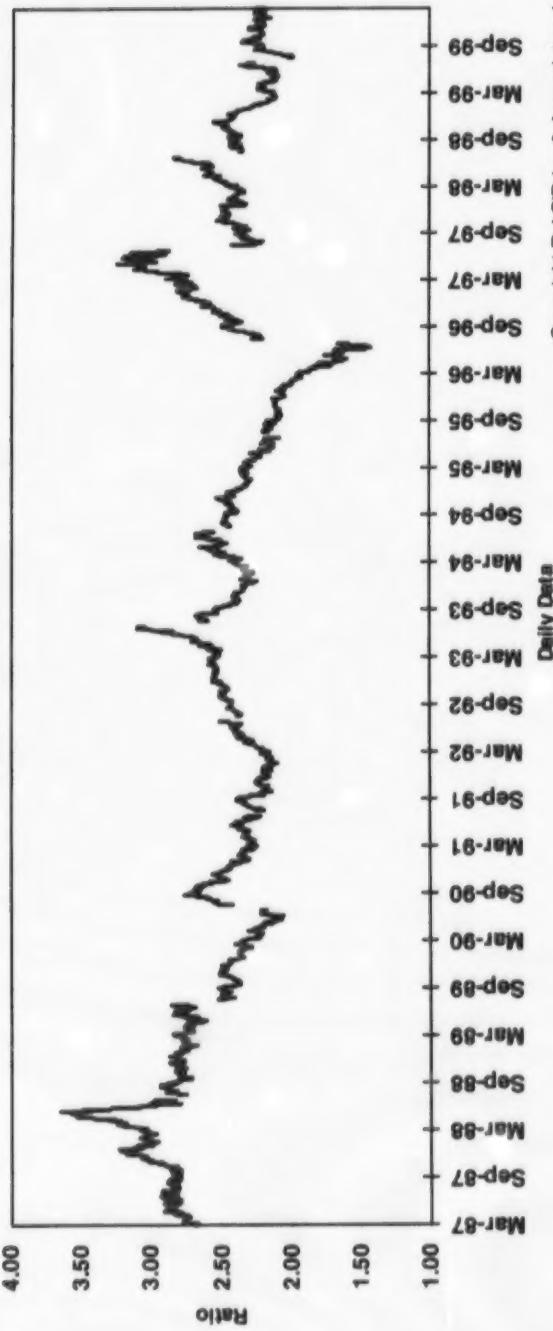
- Loan rates: corn 1.89/bu; soybeans 5.26/bu
- Non-recourse loans & LDP's
- Current LDP's are approximately:
  - corn 5-10 cents (Sept corn at 2.39/bu)
  - soybeans 50-60 cents (Sept beans at 5.24/bu)
- Significant factor in the US market 99/00 and 00/01



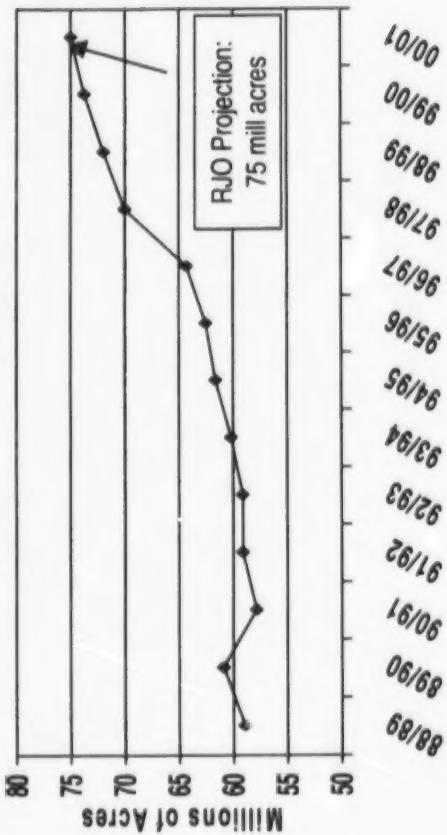
# Impact of U.S. Non-Recourse Loan and LDP Programs (cont'd)

- Inordinate soybean area largely at the expense of corn
- Loan rate price ratio is 2.78; high end of recent history
- With corn near loan and soybeans still 50-60 cents/bu below, further rallies may mitigate this factor
- We expect U.S. corn/soybean planting decisions have been largely made

Ratio Spread 1988 - 2000  
July Soybeans vs. July Corn

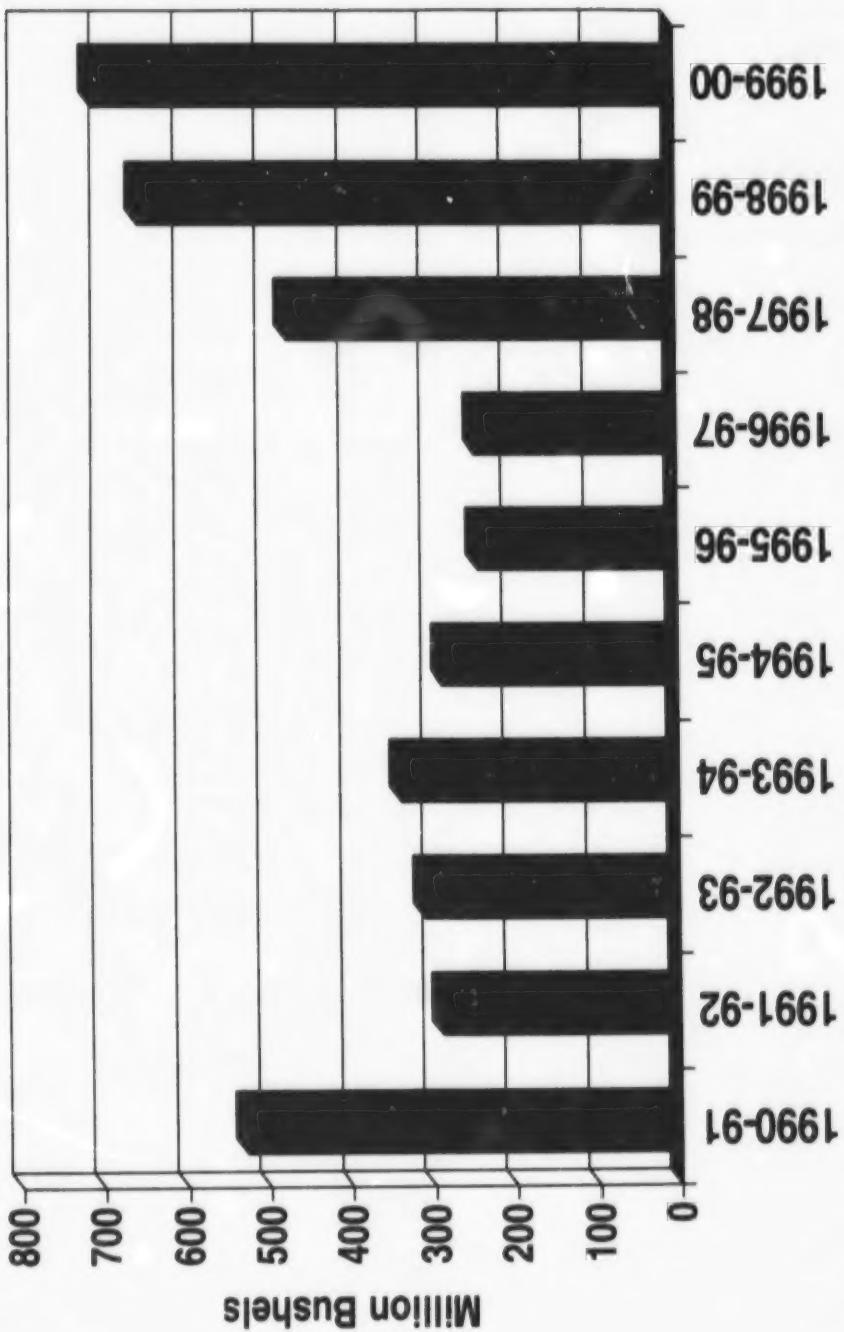


Area Planted to Soybeans in the US

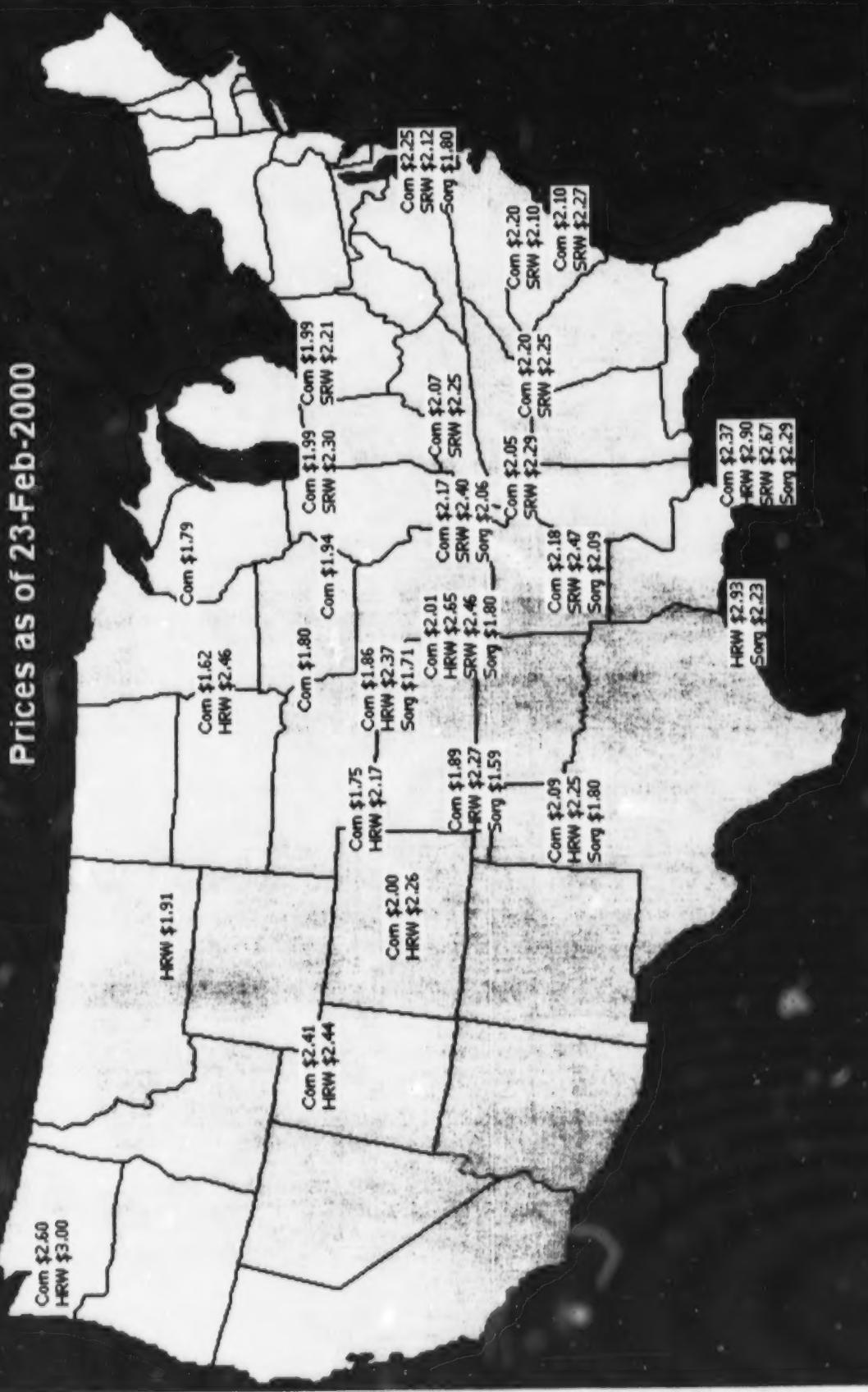


Loan Rates:  
5.26/bu for  
soybeans and  
1.89 for corn  
(ratio of 2.78)

## US Wheat Carry-Out (Excluding HRS & Durum)



## Prices as of 23-Feb-2000



February 22, 2000 Valid 7 a.m. EST

# U.S. Drought Monitor



Map focuses on widespread drought.  
Local conditions may vary.

Drought type: used only  
when impacts differ

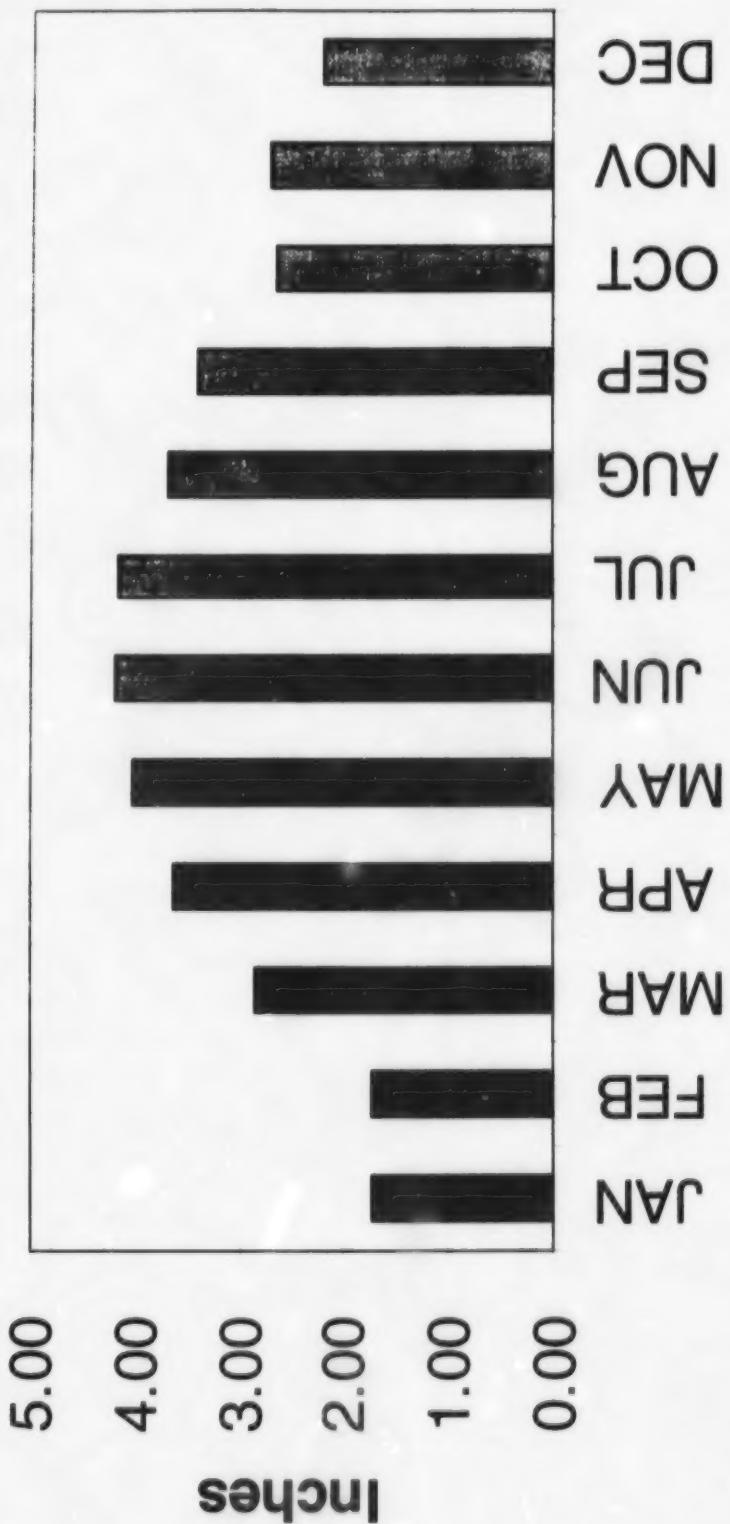
D0 Abnormally Dry  
D1 Drought- First Stage  
D2 Drought- Severe  
D3 Drought- Extreme  
D4 Drought- Exceptional  
/ Delineates Overlapping Areas



• Released Thursday, Feb. 24, 2000 •

Plus (+) = Forecast to intensify next two weeks  
Minus (-) = Forecast to diminish next two weeks  
No sign = No change in drought classification forecast

# US Corn Belt - Average Precipitation Weighted by Harvested Acres

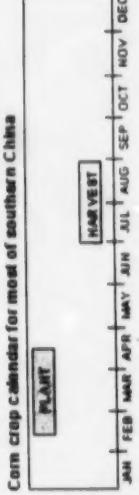
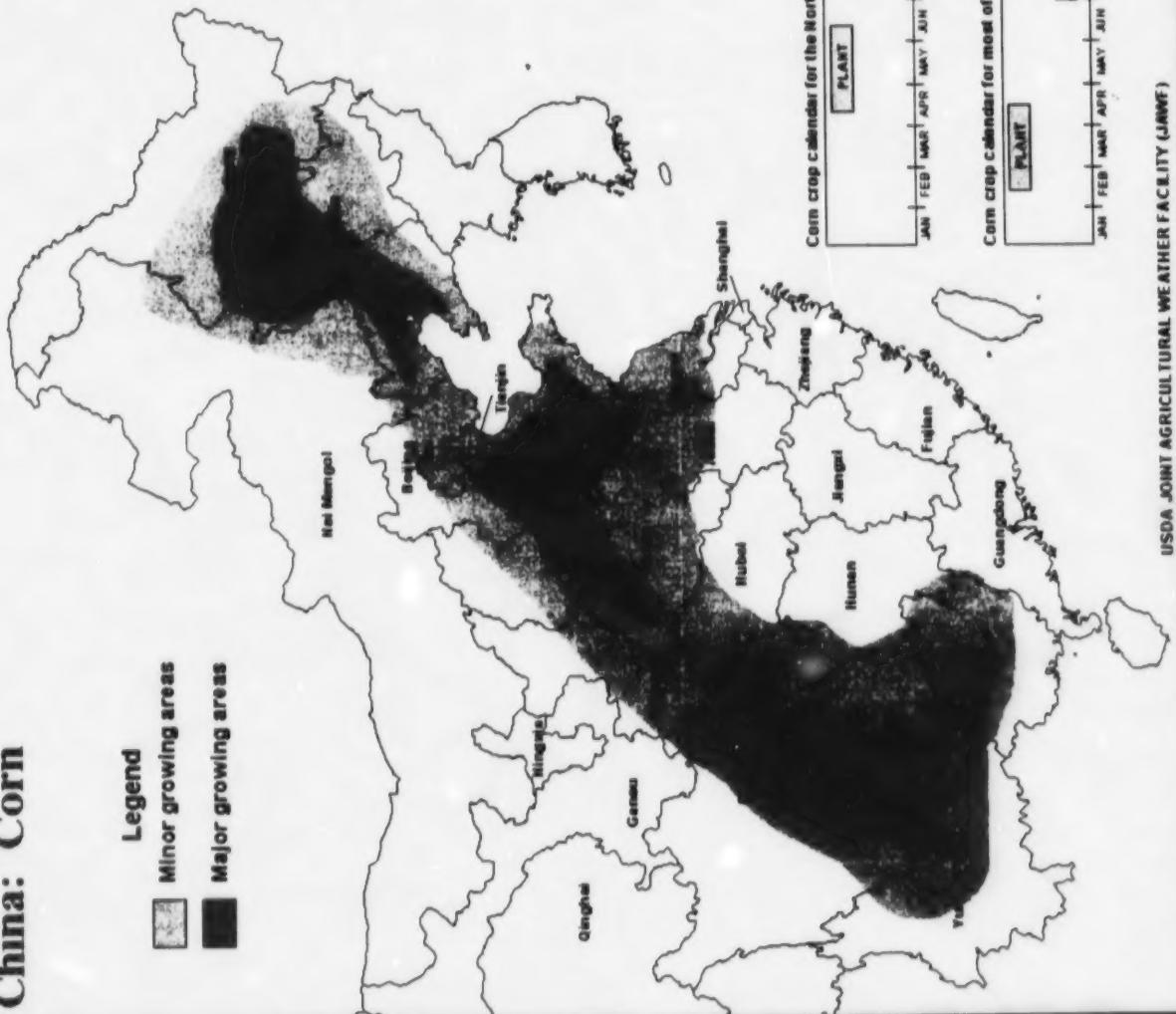
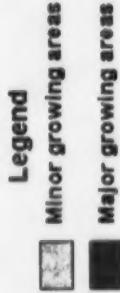


## China: Corn

Percent of corn production by province (1986-1987)

Jilin	13.3%
Shandong	12.6%
Heilongjiang	10.9%
Hebei	9.9%
Henan	8.3%
Liaoning	7.5%
Sichuan	6.1%
Nei Monggol	5.3%
Shanxi	3.4%
Shaanxi	3.2%
Yunnan	3.1%
Jiangsu	2.3%
Guizhou	2.3%
Xinjiang	2.3%
Anhui	2.1%
Guangxi	1.4%
Gansu	1.4%
Hubei	1.3%
Beijing	1.2%

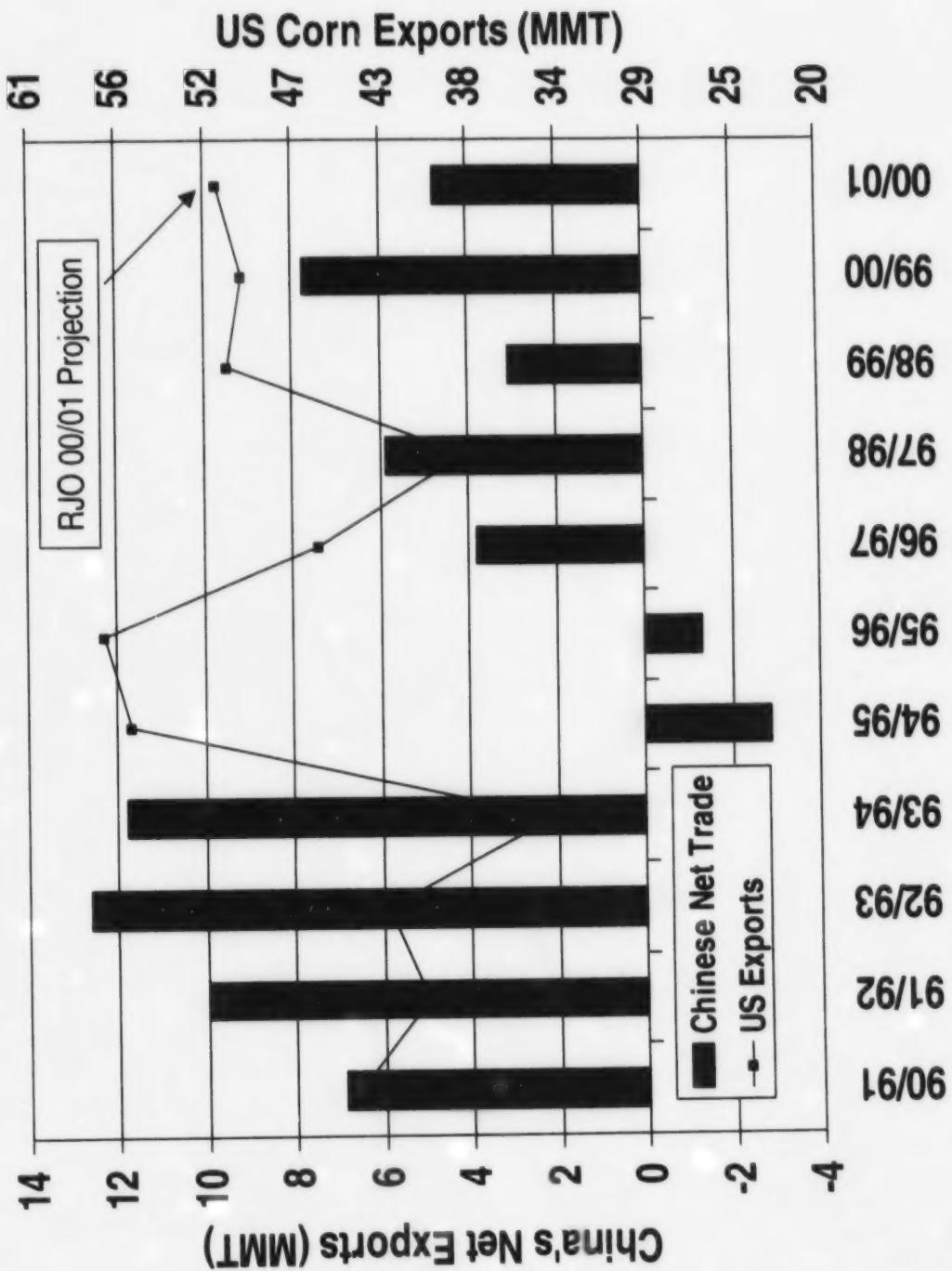
These provinces account for 97.8% of total production



# China Corn Supply/Demand

CROP YEAR	AREA HARVESTED (Mha)	YIELD (MMt)	PRODUCTION (MMt)	IMPORTS (MMt)	EXPORTS (MMt)	DOM FEED USE	DOM TOTAL USE	ENDING STOCKS (MMt)
95/96	22.77	4.92	112.0	1.48	0.17	80	106.1	34.7
96/97	24.50	5.20	127.5	0.75	3.89	86	113.4	45.0
97/98	23.78	4.39	104.3	0.29	6.17	91	117.4	26.0
98/99	25.24	5.27	133.0	0.27	3.34	93	117.3	38.6
99/00	25.80	4.96	128.0	0.25	8.00	95	120.0	38.9
00/01 <sup>1/</sup>	25.00	4.97	124.2	0.25	5.00	98	123.0	35.4

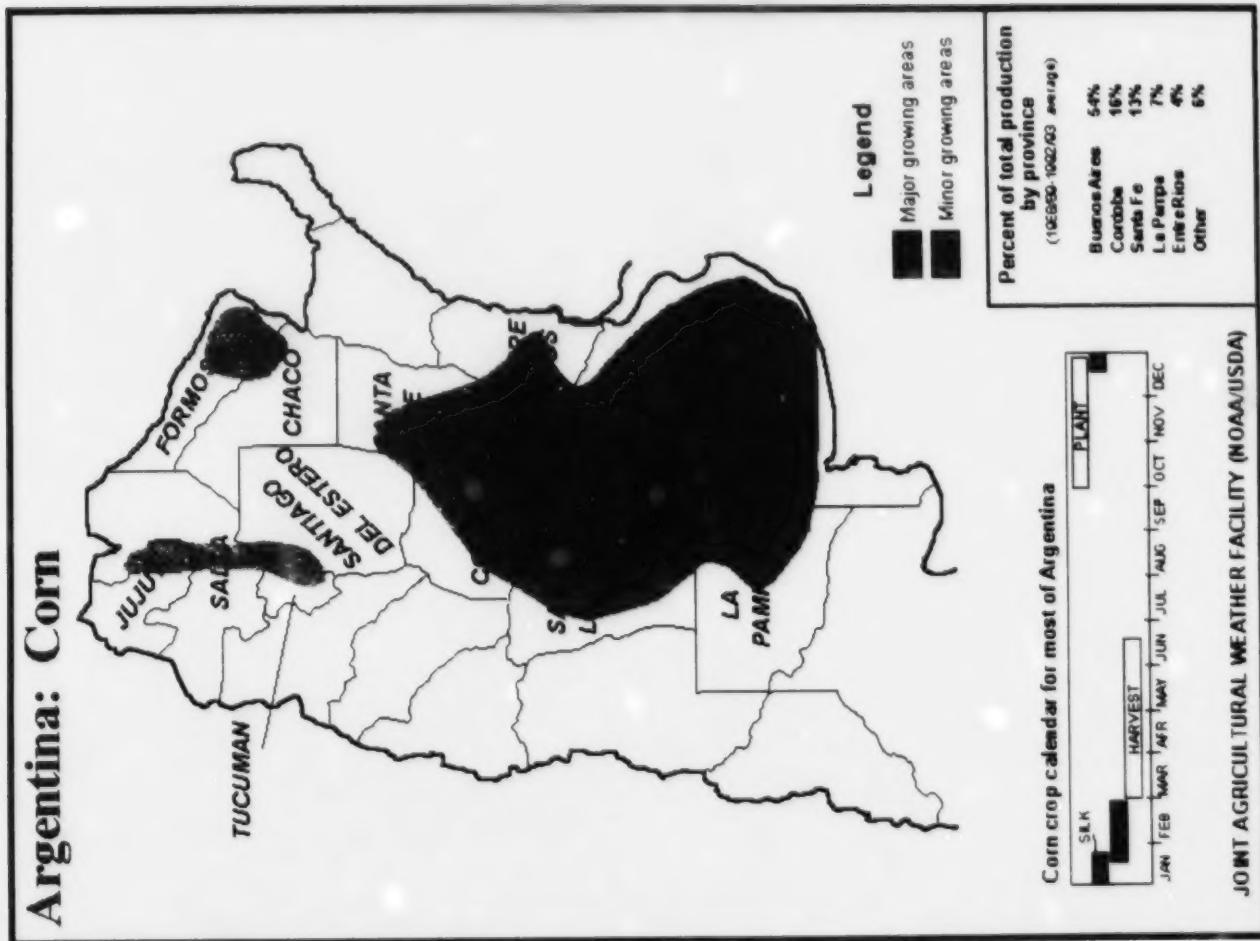
## China's Net Corn Trade and US Corn Exports



# China and WTO Accession

- Important to 00/01 price outlook and beyond
  - TRQ on accession expected to be 4.5 MMT, rising to 7.2 MMT by 2004
  - 25% of quota to private trade, rising to 40% by 2004 (plus unused gov't portion prior)
  - No export subsidies on agricultural products
  - Takes effect on accession (technically)
- Timing - Likely Jan/01 or beyond
- Market is likely to price this in and then be disappointed in the short run

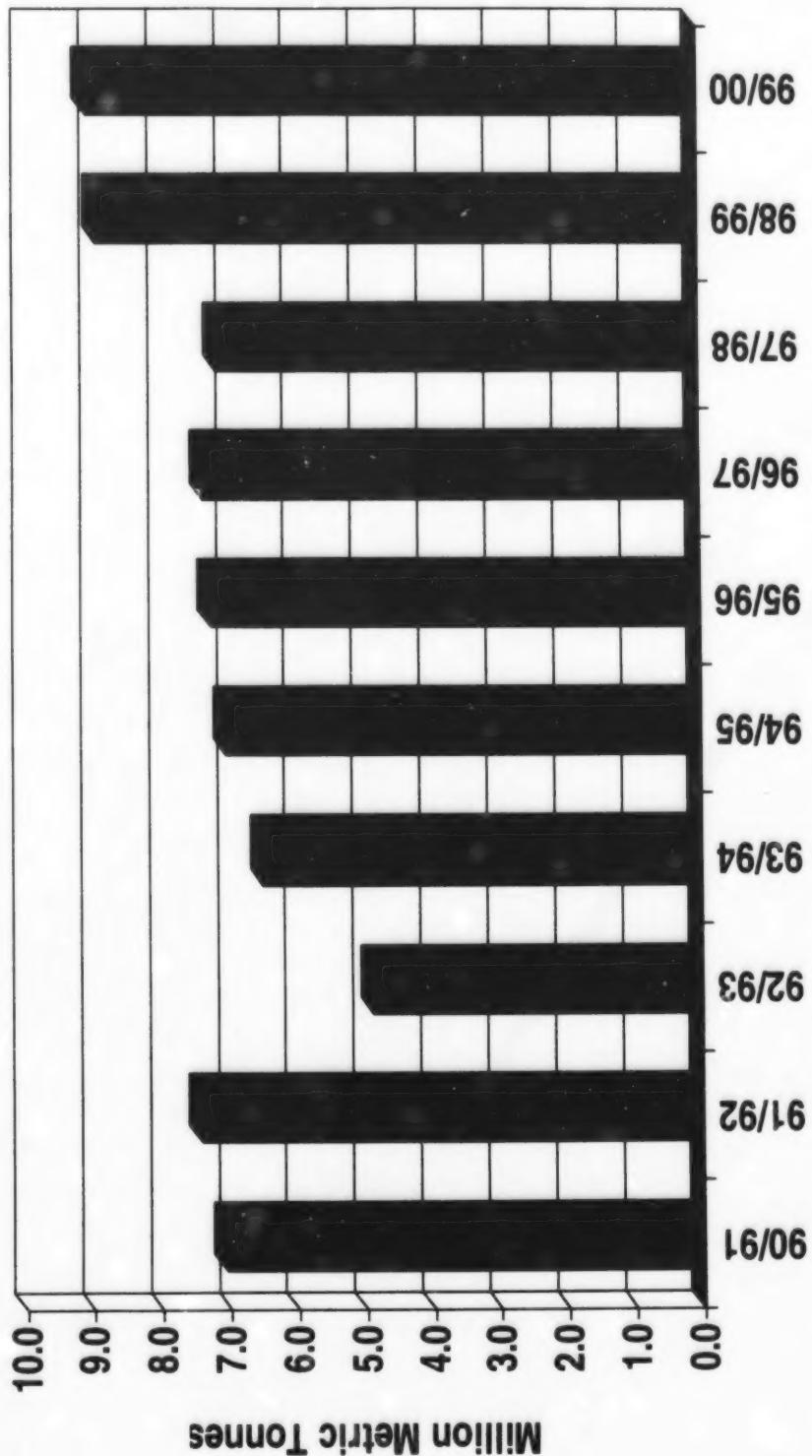
## Argentina: Corn



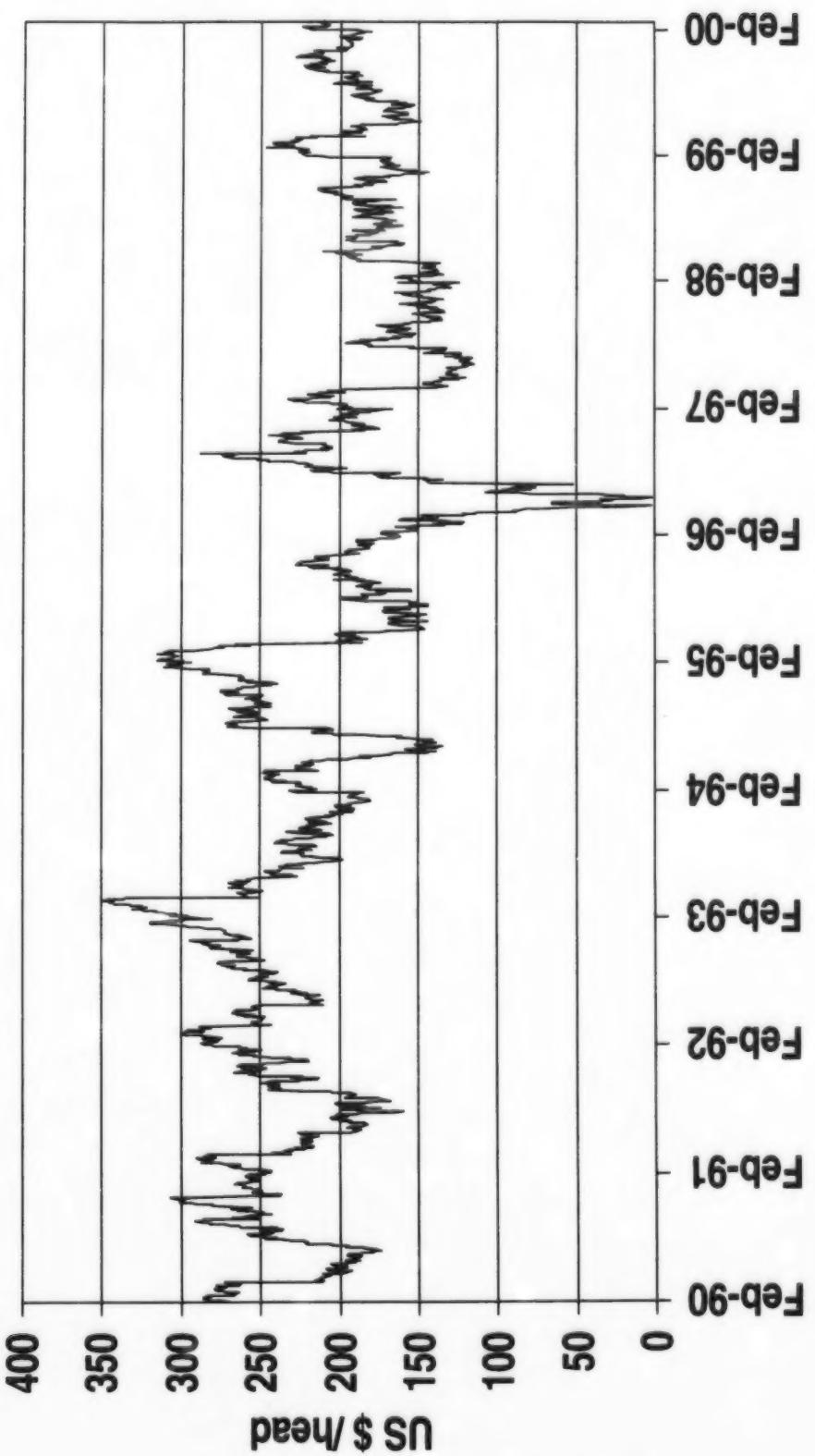
# Argentine Corn Supply/Demand

CROP YEAR	AREA HARVESTED (Mha)	YIELD (t/ha)	PRODUCTION (Mt)	EXPORTS (Mt)	DOM FEED USE	DOM TOTAL USE	ENDING STOCKS (Mt)
95/96	2.70	4.11	11.1	7.49	2.8	4.31	0.40
96/97	3.40	4.56	15.5	10.83	2.8	4.32	0.75
97/98	3.18	6.10	19.4	12.22	4.8	6.35	1.54
98/99	2.55	5.29	13.5	7.80	4.9	6.50	0.74
99/00	3.10	5.00	15.5	8.50	5.0	6.80	0.74
00/01 1/	3.20	5.20	16.6	9.50	5.2	7.00	0.87

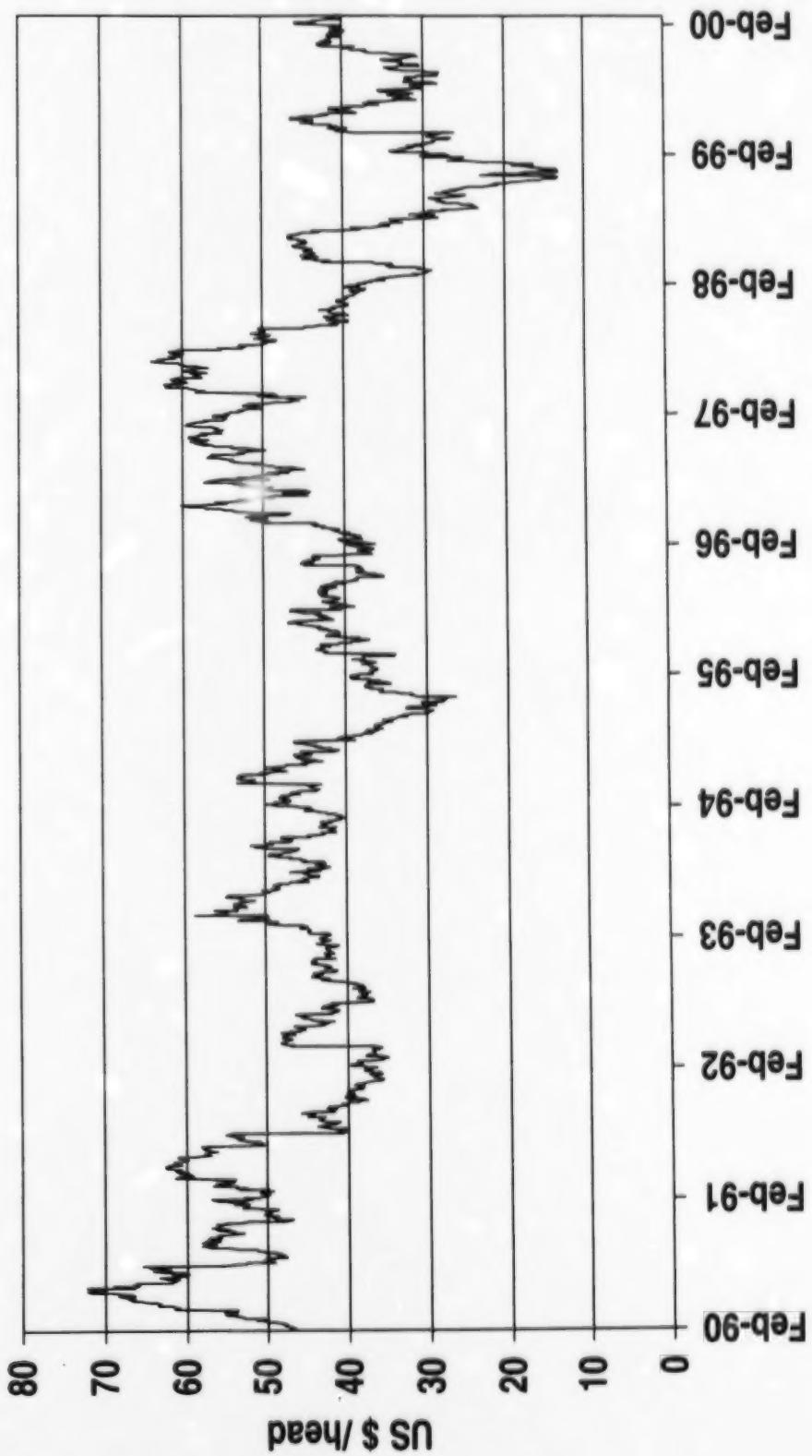
# Canadian Corn Production



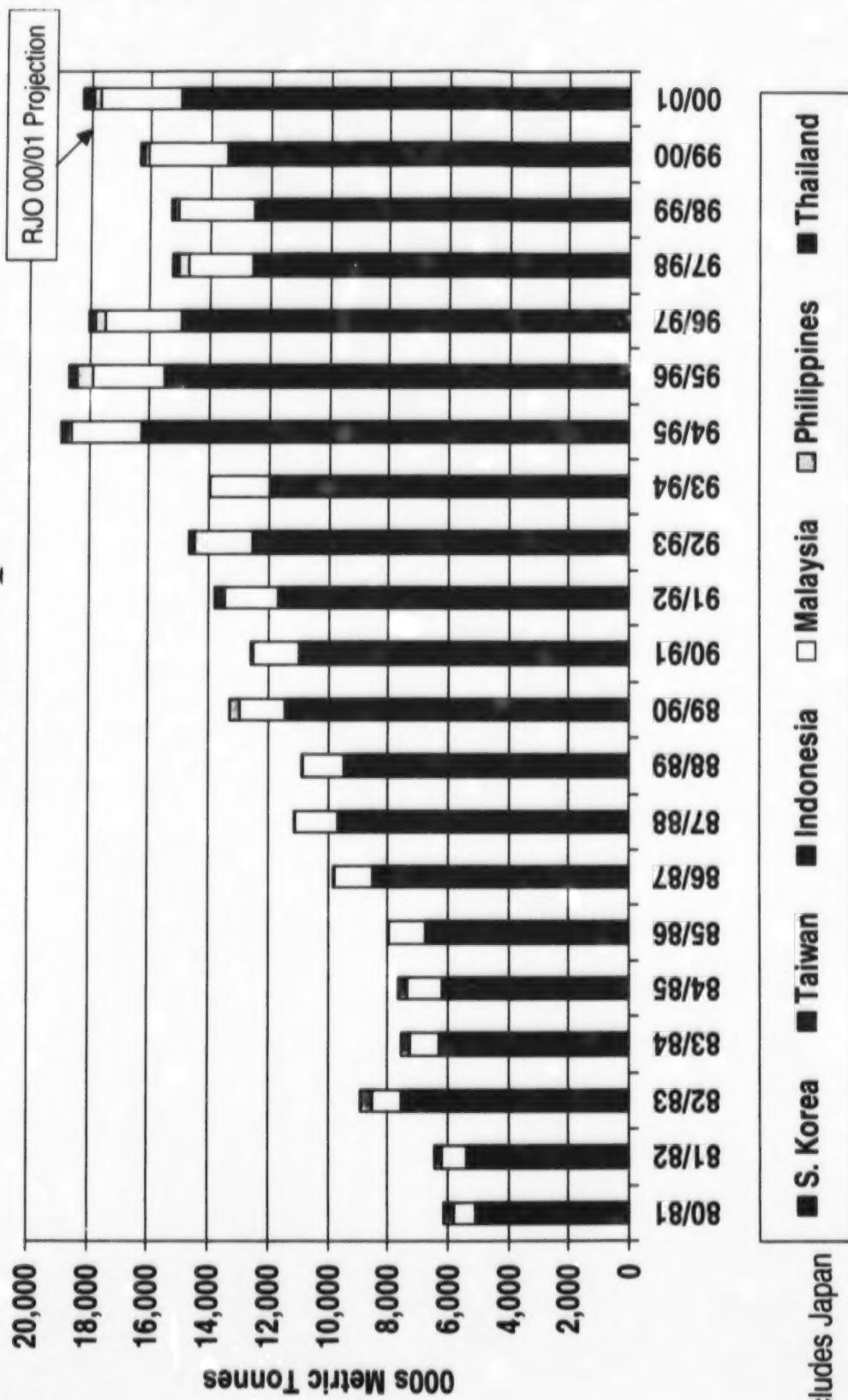
# Gross Cattle Feeding Margin



# Gross Hog Feeding Margin



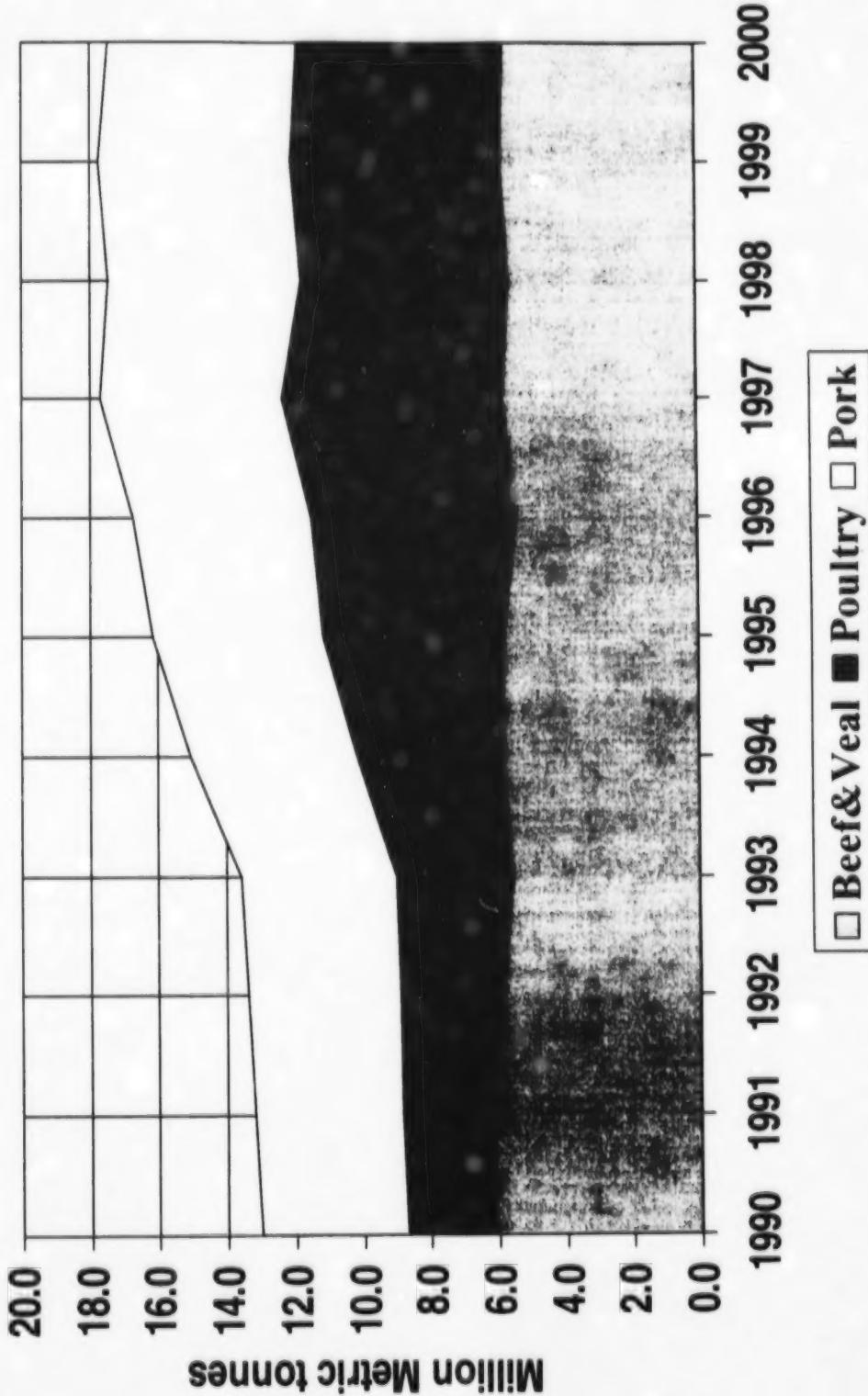
# Asian\* Corn Imports



\* Excludes Japan

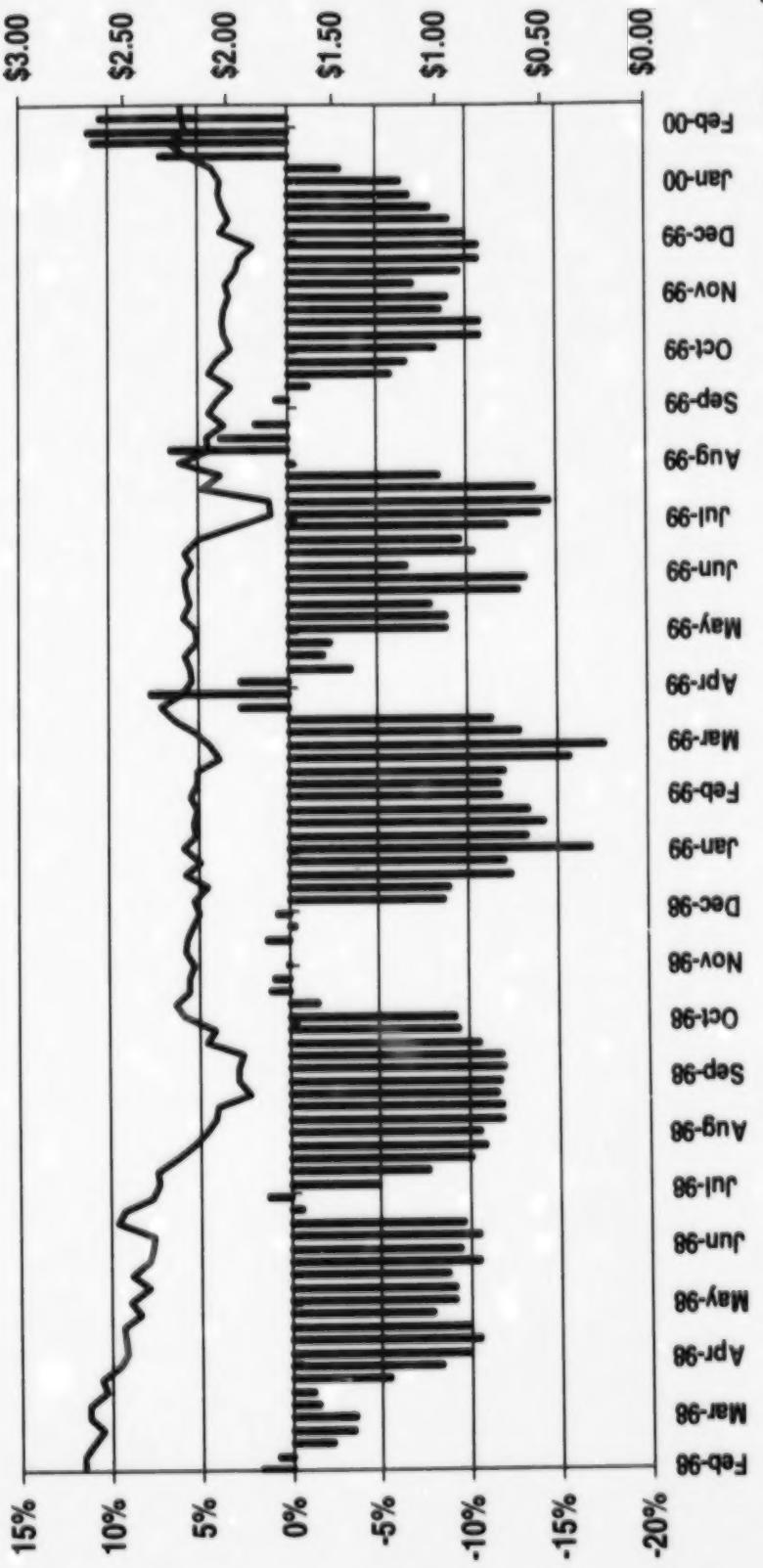
Source: USDA

# World Meat Imports 1990-2000



# Corn Fund Position

Non-Commercial	Contracts	MBU	Change	Open Interest	% of OI	Record Long	Record Short
8-Feb-00	Long	66,768	334	(18)	636,035	10.5%	21.9%

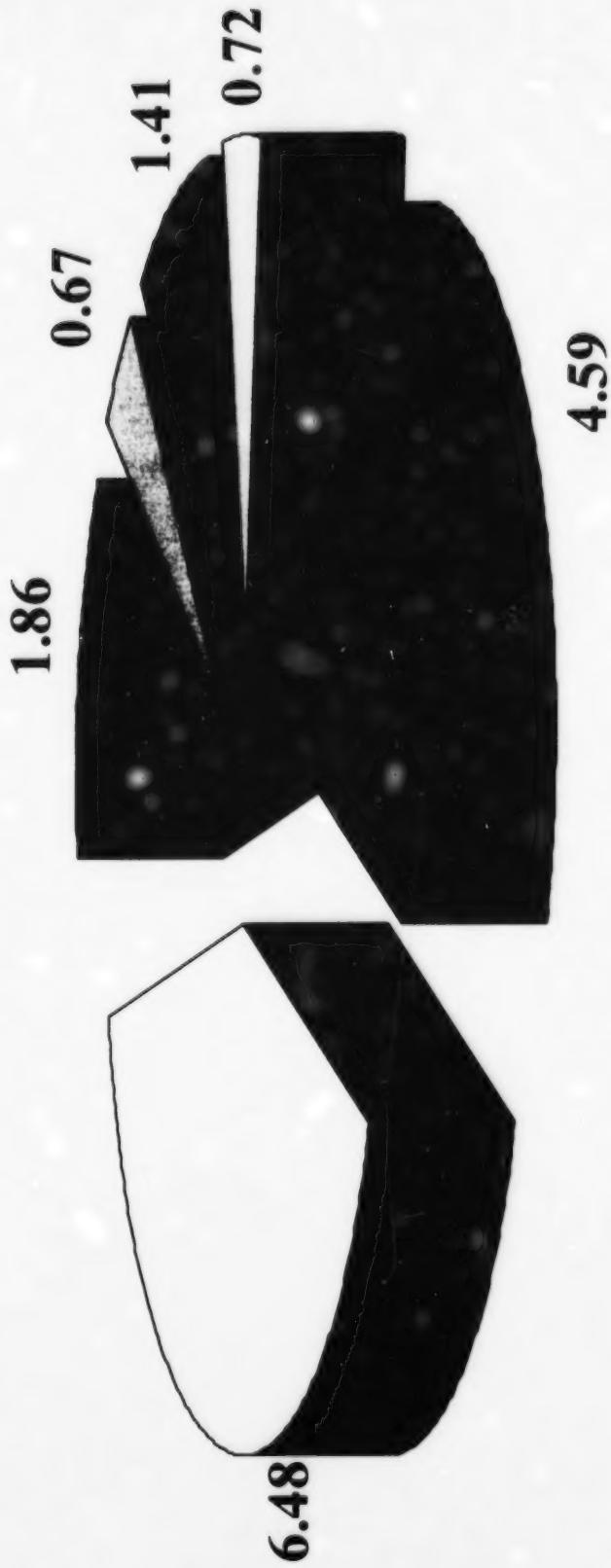


# World Barley Supply/Demand

CROP YEAR	AREA HARVESTED (Mha)	YIELD (t/ha)	PRODUCTION (MMt)	IMPORTS (MMt)	EXPORTS (MMt)	TOTAL USE	DOM STOCKS (MMt)	ENDING STOCKS (MMt)	STOCK/USAGE (%)
95/96	68.59	2.07	142.15	19.09	19.36	150.85	19.35	12.8	
96/97	65.96	2.33	153.51	22.54	22.99	149.25	23.61	15.8	
97/98	64.98	2.38	154.59	16.92	17.51	146.19	32.02	21.9	
98/99	61.30	2.24	137.18	21.34	21.27	140.19	29.00	20.7	
99/00	56.66	2.27	128.67	21.58	22.05	133.55	24.12	18.1	
00/01 1/	58.00	2.30	133.47	21.70	21.80	135.00	22.59	16.7	

# Major Barley Importers 97/98 to 99/00

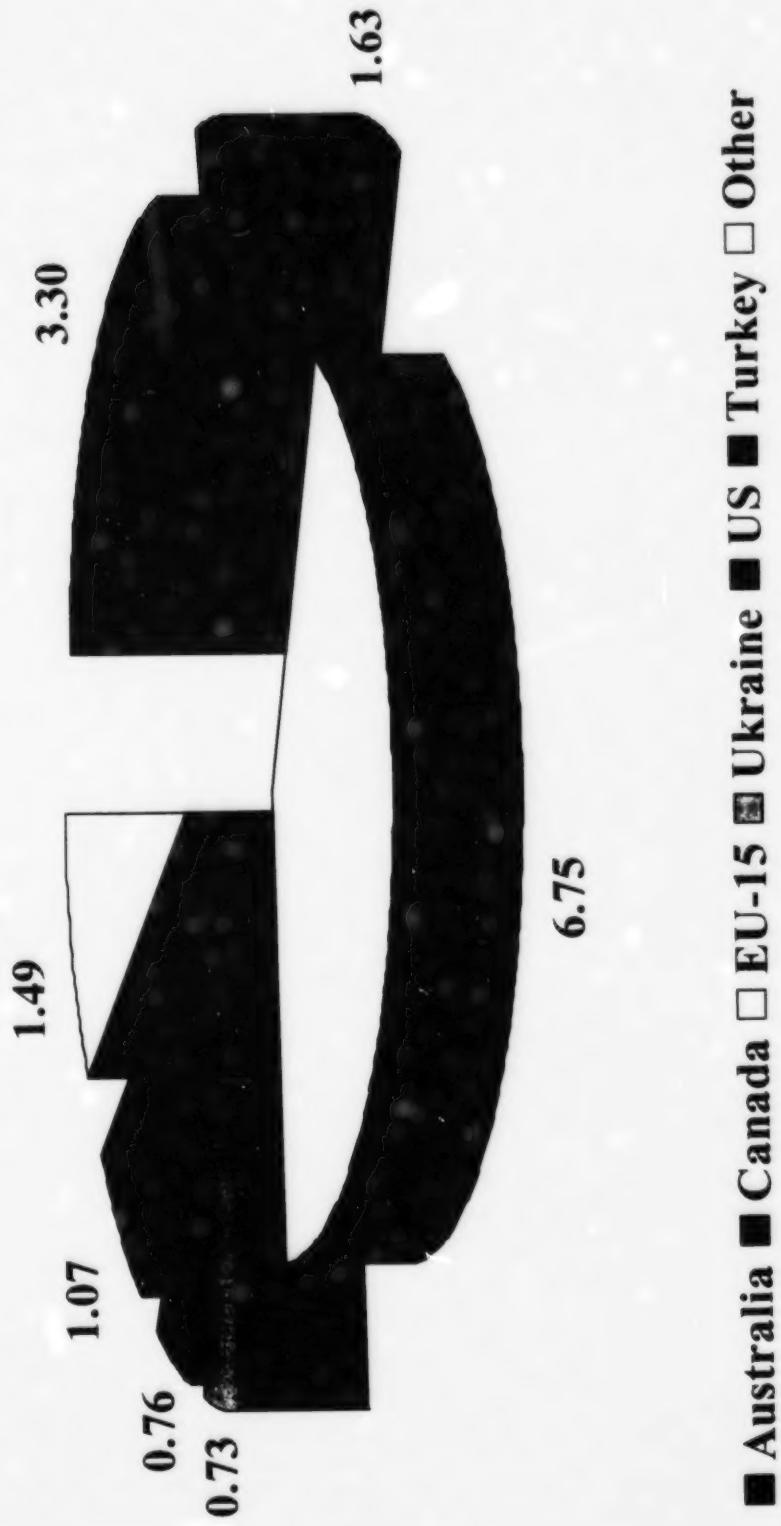
(Million Metric Tonnes)



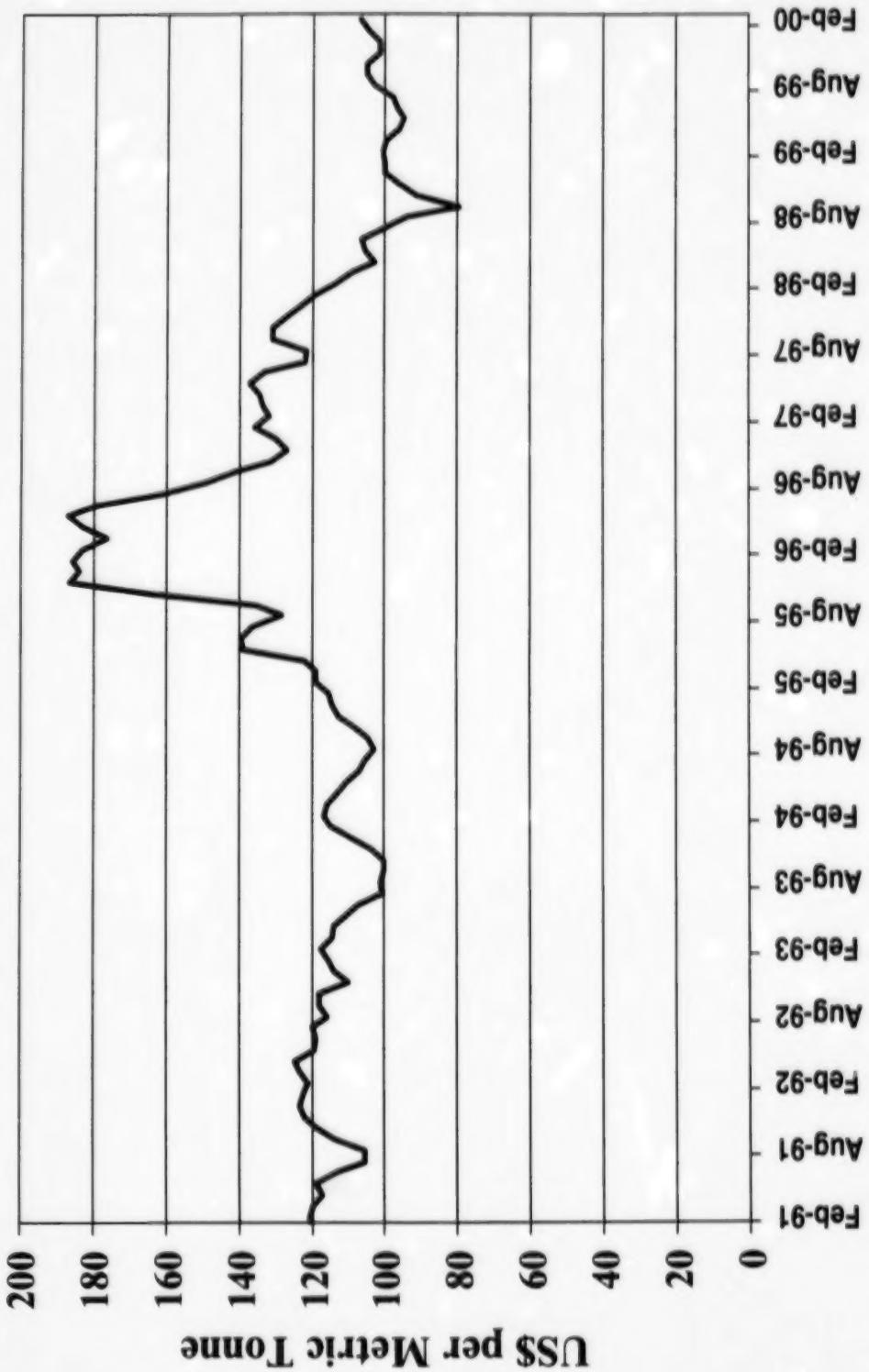
■ China ■ Iran ■ Japan □ Morocco ■ Saudi Arabia □ Other

# Major Barley Exporters 97/98 to 99/00

(Million Metric Tonnes)

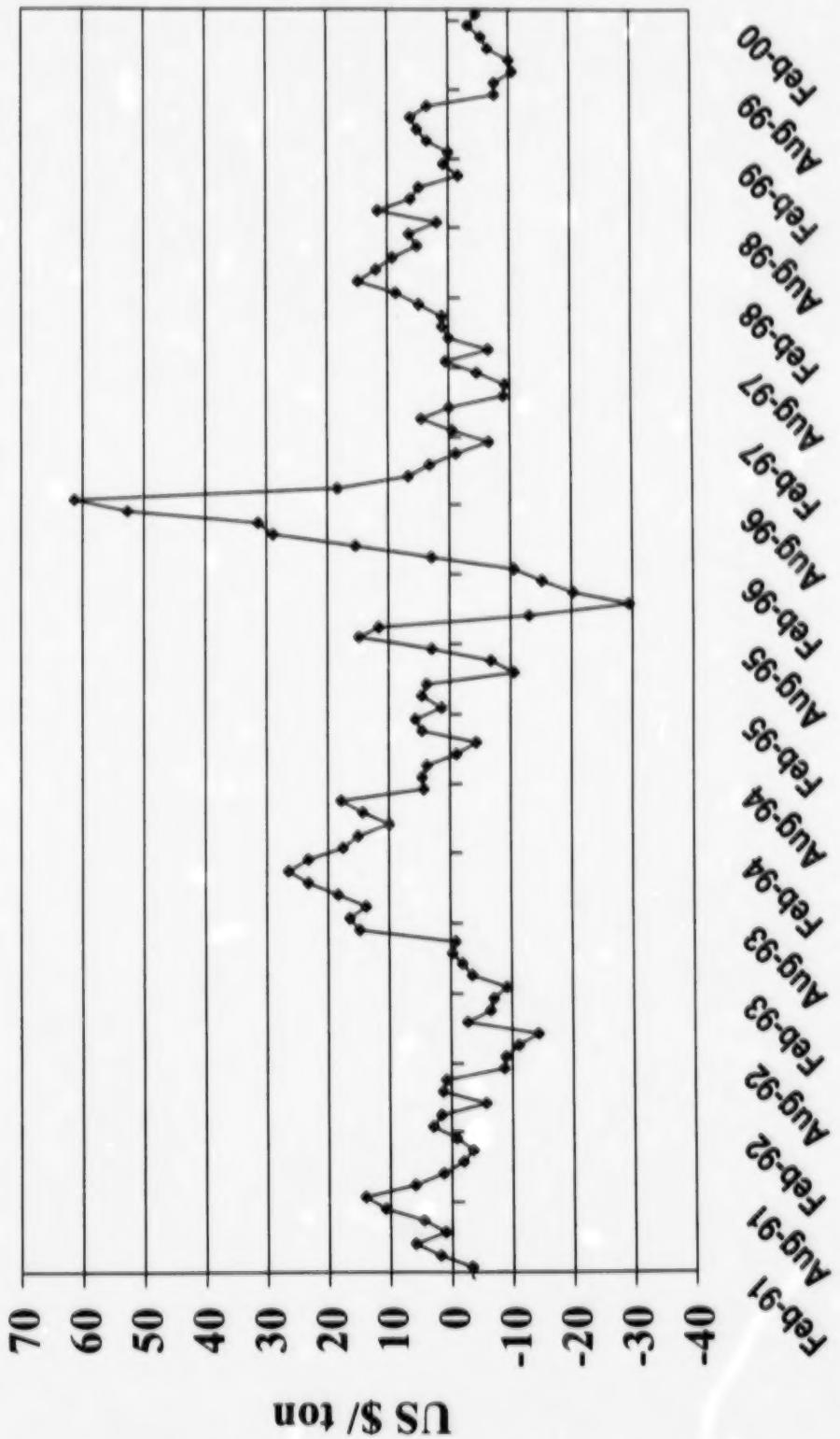


# Monthly Average PNW Barley



Source: Canadian Wheat Board

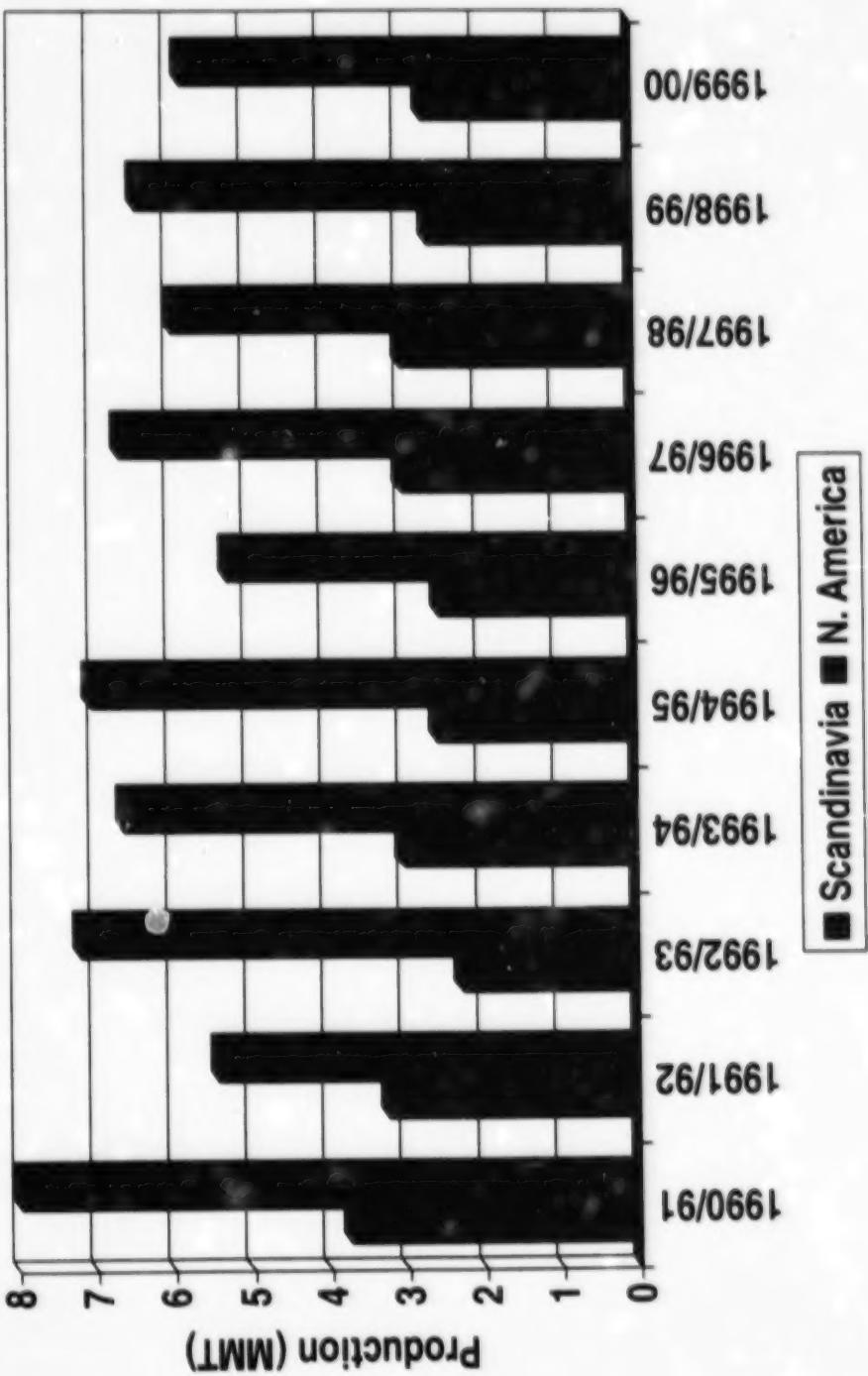
## FOB PNW: #3 Yellow Corn - #2 Barley Spread



# World Oat Supply/Demand

CROP YEAR	AREA HARVESTED (Mha)	YIELD (MMt)	PRODUCTION (MMt)	IMPORTS (MMt)	EXPORTS (MMt)	DOM FEED USE	DOM TOTAL USE	ENDING STOCKS (MMt)
95/96	18.45	1.56	28.75	1.98	2.12	24.03	30.82	3.41
96/97	17.66	1.74	30.64	2.78	2.71	23.45	30.28	3.77
97/98	16.63	1.86	30.90	2.48	2.61	22.58	29.11	5.57
98/99	15.52	1.68	26.05	2.23	2.21	19.89	27.01	4.61
99/00	14.37	1.71	24.63	2.39	2.24	18.27	25.59	3.65
00/01 <sup>1/</sup>	14.00	1.71	23.93	2.40	2.30	24.20	3.34	

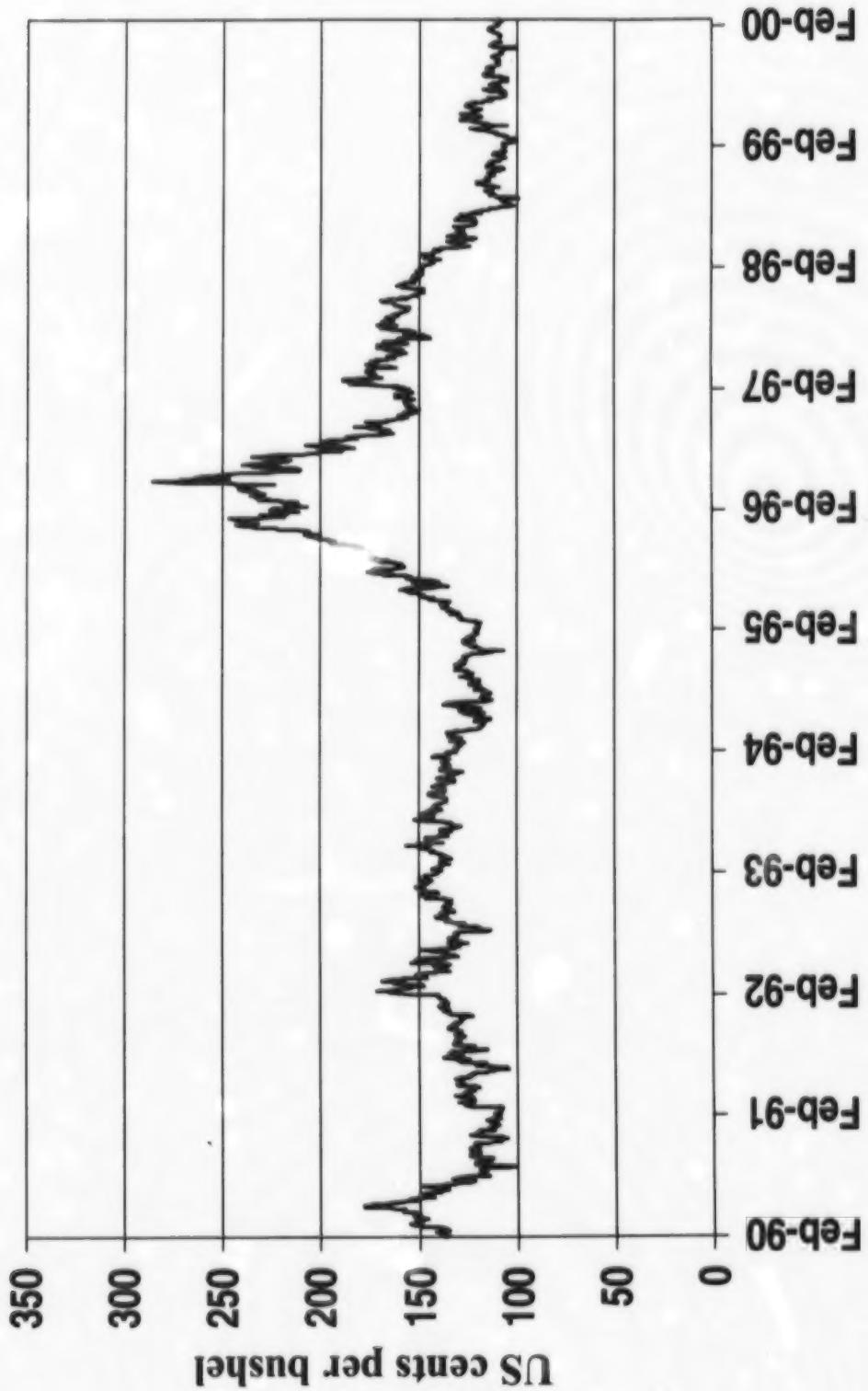
# Scandinavian\* and North American Oat Production



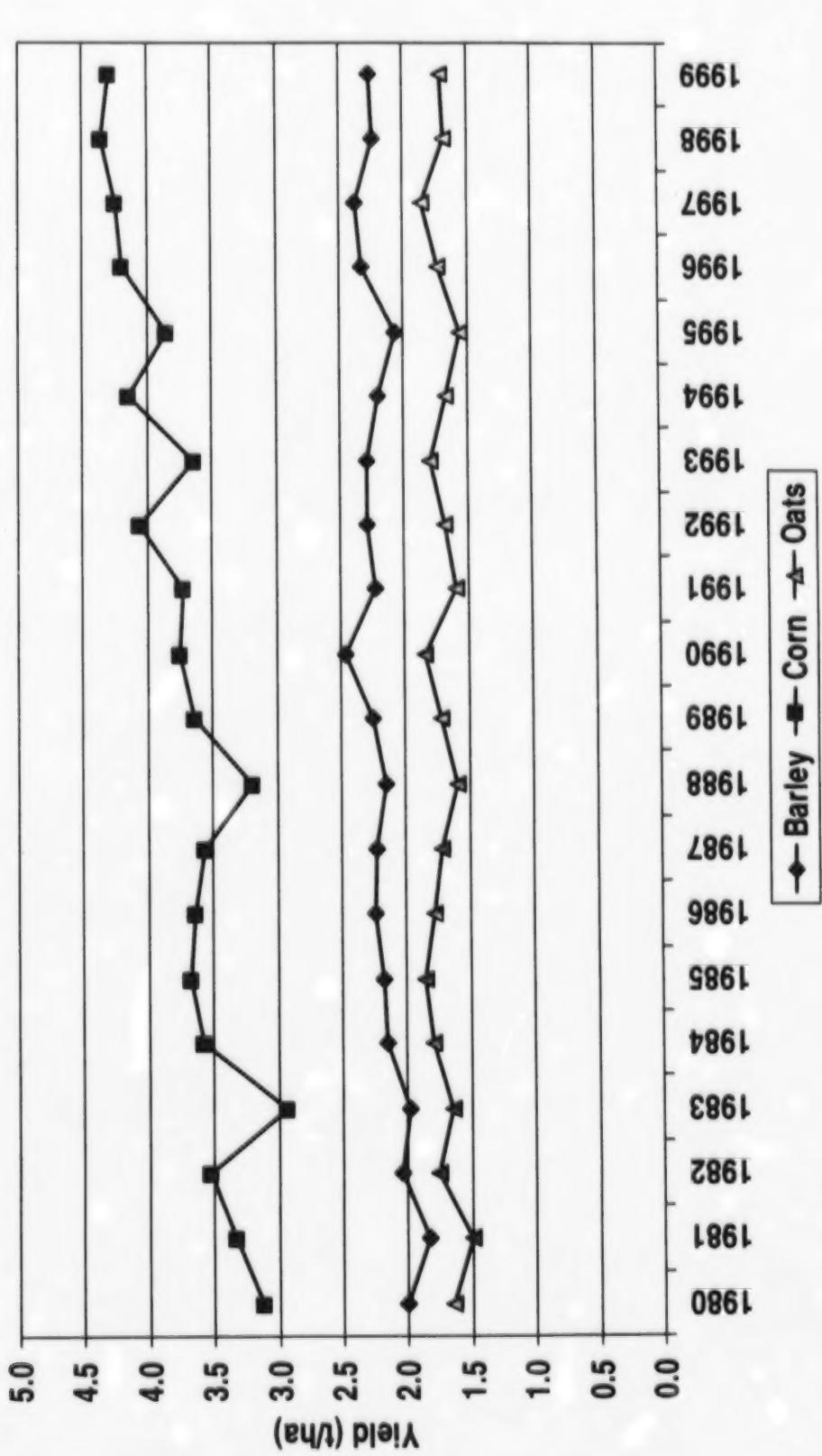
\* Includes: Denmark, Finland, Norway, and Sweden

Source: USDA

# Nearby Oat Futures



# World Yield 1980 to 1999



# Summary

- Bullish Factors
  - Rather small yield decline in U.S. could eliminate buffer stocks
  - LDP/loan favors soybean acreage again
  - Rebound in world feed demand
  - Market has become accustomed to hand-to-mouth buying
- Bearish Factors
  - Old crop corn stocks still heavy
  - U.S. wheat poses competitive threat
  - Expect China/WTO to disappoint
  - Price has done a poor job of rationing supply in “non-subsidized” countries

# Summary (con't)

- Corn
  - Expect additional weather premium to be built into the market (and significant volatility this spring)
  - Tug-of-war between more bullish medium term fundamentals/funds and weight of short term U.S. cash supplies
- Barley/Oats
  - Constructive underpinnings
  - Expect malt barley to drive higher acreage



*GrainWorld*

## CWB Barley Outlook

Presented By: Joan Anderson  
Marketing Manager Barley/Products  
CWB  
Winnipeg, Manitoba

Presented to: **Grain World 2000**  
**Winnipeg, Manitoba**  
**February 28, 2000**

## **World Barley Outlook**

### **Grain World 2000 – February 28, 2000**

Joan Anderson  
Marketing Manager  
Sales and Market Development  
Canadian Wheat Board

#### **Introduction**

In the last six months, global feed and malting barley prices have strengthened significantly. Price increases were driven by strong import demand and relatively tight global exporter supplies. In spite of the bearish global coarse grain market, feed barley demand has proven inelastic, now trading at a US \$10 premium to corn.

In 2000-01, global feed barley trade is forecast to be down slightly with lower Iranian and North African imports partially offset by higher Saudi Arabian imports, while malting barley trade is forecast to increase. Low malting barley carry-in and continued strong import demand next year will be balanced by larger crops in the U.S., Canada and Australia. However, malting barley prices are expected to come under new crop pressure while feed barley prices are forecast to remain steady, firming up in 2001.

#### **Overview of 1999-00**

Drought in the Middle East and North Africa in 1999 led to strong import demand for feed grains in these areas. Barley imports have been strong in Morocco and the other North African countries as well as in Iran. Saudi Arabia's imports are forecast at 4.8 MT, 38% of global feed barley trade, and Japan at 1.5 million tonnes.

With regard to supplies, the EU emerged as the only major seller of feed barley on the international market in 1999-00 accounting for almost 70% of all feed barley exports this year. Canada's exports have been low in the last three years with global prices below the domestic market. Australia's 1999 barley production was down 1.0 million tonnes from 1998, reducing the exportable surplus of both feed and malting barley. In addition, small crops in Russia and Eastern Europe reduced the supplies in this region limiting exports.

Malting barley prices increased as a result of lower supplies in both Canada and Australia coupled with strong demand. EU exports increased to a record 1.1 million tonnes, however much of this was absorbed by Eastern Europe and Russia where demand was strong for malting barley and malt. China is forecast to import 2.0 million tonnes of malting barley in 1999-00 (Oct/Sep) and global trade is expected to be up 600,000 tonnes from last year to 4.4 million tonnes.

#### **Forecast for 2000-01**

The price outlook for barley is mixed for 2000-01, with six-row malting barley prices forecast to be under pressure given the expected increase in U.S. production. Two-row prices are poised to remain firm in 2000-01 given low global carry-in and continued strong import demand. However, there is the potential for increased supplies as Canada and Australia are set to increase malting barley area. Feed barley prices are forecast to be steady through this year, firming up slightly in 2001.

In the U.S., larger barley area is expected, although still low relative to historical levels. Area planted to malting barley will be up and production should improve over last year when spring rains prevented seeding of crops. In addition, rains later in the summer downgraded barley from malting to feed quality.<sup>1</sup> Overall, the U.S. should have better domestic supplies of malting barley in 2000-01, although feed barley exports will likely remain well below average.

EU barley production is forecast to be flat in 2000 at just over 49 million tonnes. EU barley ending stocks are forecast to fall to 8.5 million tonnes at the end of 2000-01 from 10.8 million tonnes in the current year. Exports of feed barley are forecast to drop next year due to expectations of increased competition. Malting barley exports are also forecast to drop somewhat, but the EU is still expected to be a major supplier of malting barley to the global market in 2000-01.

In 2000-01, the EU's WTO<sup>2</sup> commitments will limit the amount of subsidized coarse grain exports to 10.84 million tonnes. This will oblige the EU to be careful in its application of export subsidies on barley and should be supportive of feed and malting barley prices.

In Australia, barley production is expected to recover somewhat next year, and malting barley exportable supplies should increase. However, Australia's barley S&D is still relatively tight and therefore feed barley exports are forecast flat from 1999-2000 at 1.5 million tonnes. This is positive for global feed barley prices as Australia will continue to focus on their traditional core markets.

Canadian barley production is forecast up slightly in 2000, with the percentage of area sown to malting barley versus feed barley expected to increase. Canadian feed barley exports fell to a historical low in 1998-99 at 130,000 tonnes, compared with over 2.0 million tonnes two years earlier. A large increase in domestic consumption of feed grains in Western Canada in recent years coupled with weak global values have led to the drop in Canadian feed barley exports. In the current year, given global prices which are now reaching levels competitive with the domestic market, Canadian feed barley exports have increased, although they are still historically low. Canadian feed barley exports in 2000-01 are forecast to remain flat with malting barley exports forecast to increase.

### **Conclusion**

Feed barley prices are expected to be flat to somewhat stronger in 2000-01. Increased competition on the global feed barley market and generally bearish corn fundamentals will be offset by lower global barley ending stocks. Relatively strong demand and the EU's WTO commitments on coarse grain export subsidies will help to ensure that prices remain firm in 2000-01.

Global two-row malting barley prices are forecast to be firm in early part of the coming marketing year but are expected to come under new crop pressure near the end of 2000. Six-row prices are expected to be under pressure as U.S. and Canadian production of malting barley is forecast to increase. This will lead to a wider, more traditional spread between two-row and six-row returns in the coming year.

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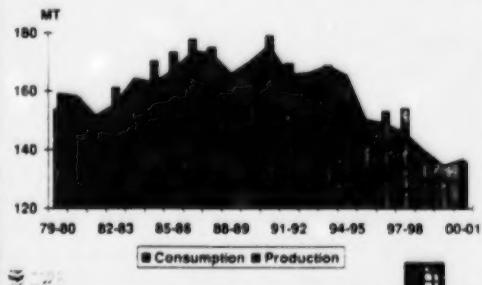
<sup>1</sup> Note that fusarium head blight was not as serious a problem as it has been in previous years.

<sup>2</sup> World Trade Organization

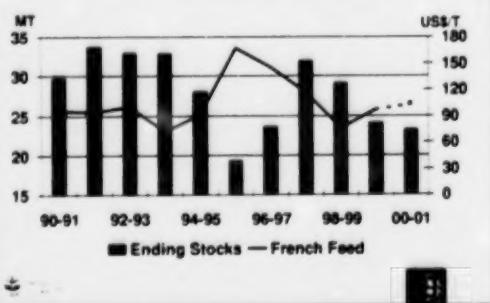
### Feed barley overview: 1999-00

- Increasing global feed barley prices (up \$20/T from one year ago) in spite of falling corn prices.
- Strong import demand from Saudi Arabia, Iran, North Africa.
- Limited competition from both traditional and non-traditional suppliers.
- The European Union (EU) reduced barley export subsidies taking global feed barley prices higher.

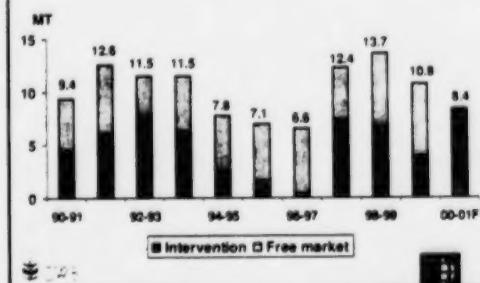
### World barley production vs. consumption



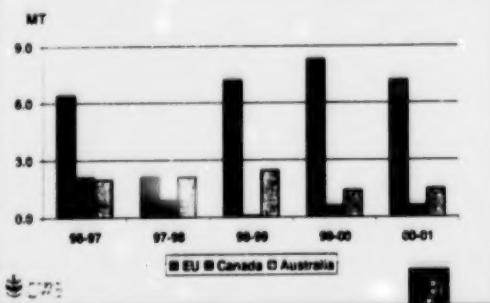
### World barley ending stocks vs. prices



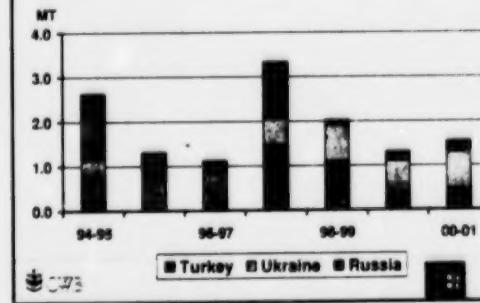
### EU barley ending stocks



### Major feed barley exporters



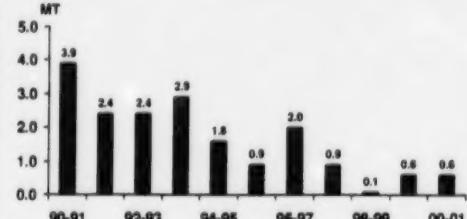
### Minor barley exporters



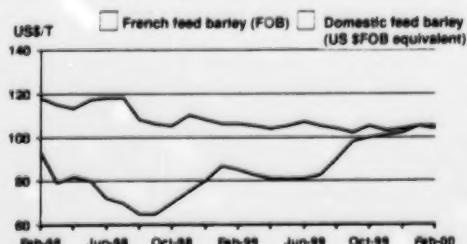
### Major Feed Barley Importers

	1998-99	1999-00	2000-01
- 000 tonnes -			
Saudi Arabia	5,500	4,800	5,200
Other M. East	1,480	2,000	1,600
North Africa	1,915	1,425	1,300
Japan	1,650	1,430	1,430
World Total	13,395	12,550	12,270

### Canadian feed barley exports



### World barley prices vs. Cdn domestic feed



### Canadian Barley S&D

(Aug/Jul)

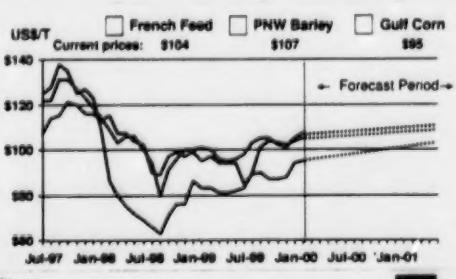
	1998-99	1999-00	2000-01
- 000 tonnes -			
Carryin	2,459	2,687	2,568
Production	12,709	13,196	13,340
Dom. Use	10,848	10,800	10,850
Exports	1,895	2,515	2,700
Carryout	2,687	2,568	2,358

### Feed barley outlook: 2000-01

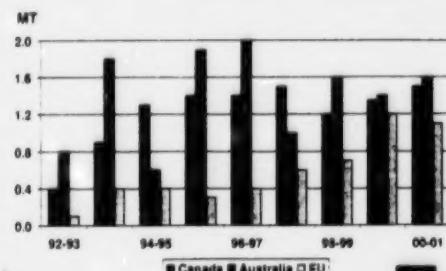
#### Bears

- ❑ Trade forecast to fall slightly.
- ❑ Increased competition from minor exporters.
- ❑ Bulls
- ❑ Continued strong demand from Saudi Arabia.
- ❑ Limited competition from traditional exporters.
- ❑ Lower global ending stocks.
- ❑ 10.84 MT limit on EU subsidized coarse grain exports.

### Coarse grain prices (FOB)



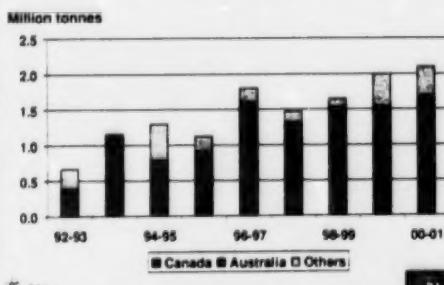
### Major malting barley exporters



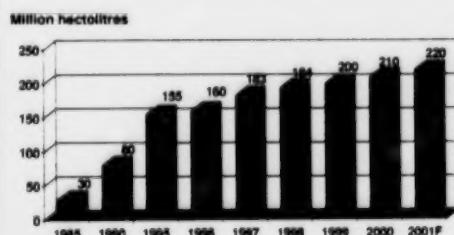
### Major malting barley importers

	1998-99	1999-00	2000-01
- 000 tonnes -			
China	1,650	2,000	2,100
U.S.	565	700	630
Mexico	220	275	325
Russia	75	275	150
Colombia	200	175	200
World Total	3,835	4,375	4,500

### China's malting barley imports



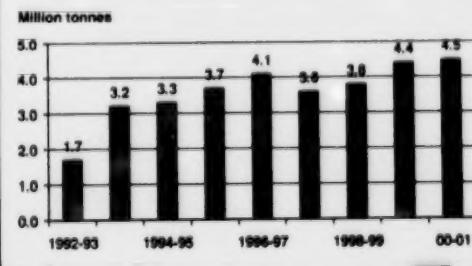
### China's beer production

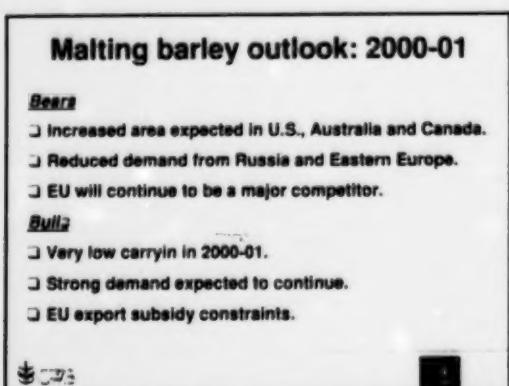
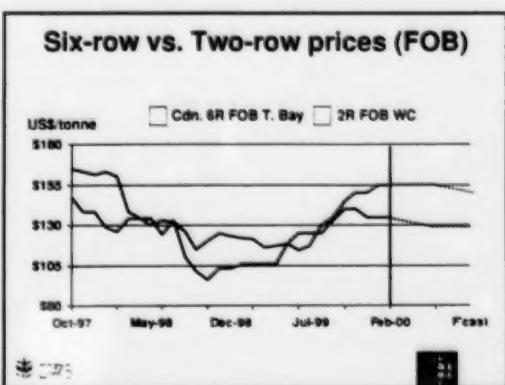
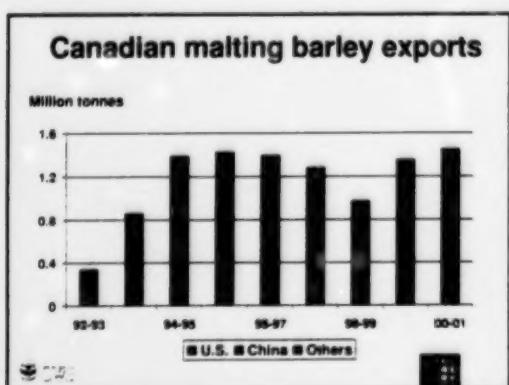
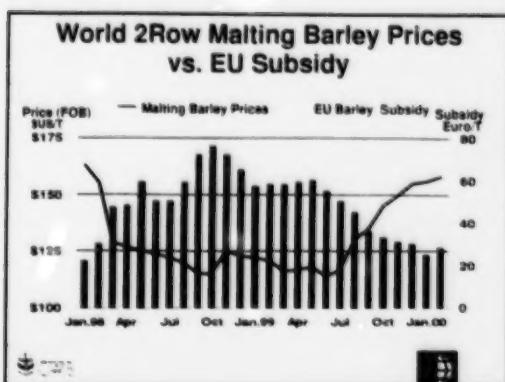


### Estimated world malting barley S&D 1999-00 (Oct/Sep)

	Supply - '000 tonnes -	Demand
Australia	1,400	2,000
Canada	1,350	700
EU	1,225	275
U.S.	140	275
Argentina	55	175
Others	205	950
Total	4,375	4,375
		Total

### World malting barley trade





### Pool return summary: Feed Barley & Malting Barley

Cdn \$ per tonne in store Vancouver or St. Lawrence

	1998-99 Actual returns	1999-00 Feb PRO	2000-01 Mar PRO
<b>Feed Barley</b>			
1CW	147	133	134
<b>Malting Barley</b>			
SS 2-Row	172	190	184
SS 6-Row	161	182	169



## **Oilseeds Outlook**

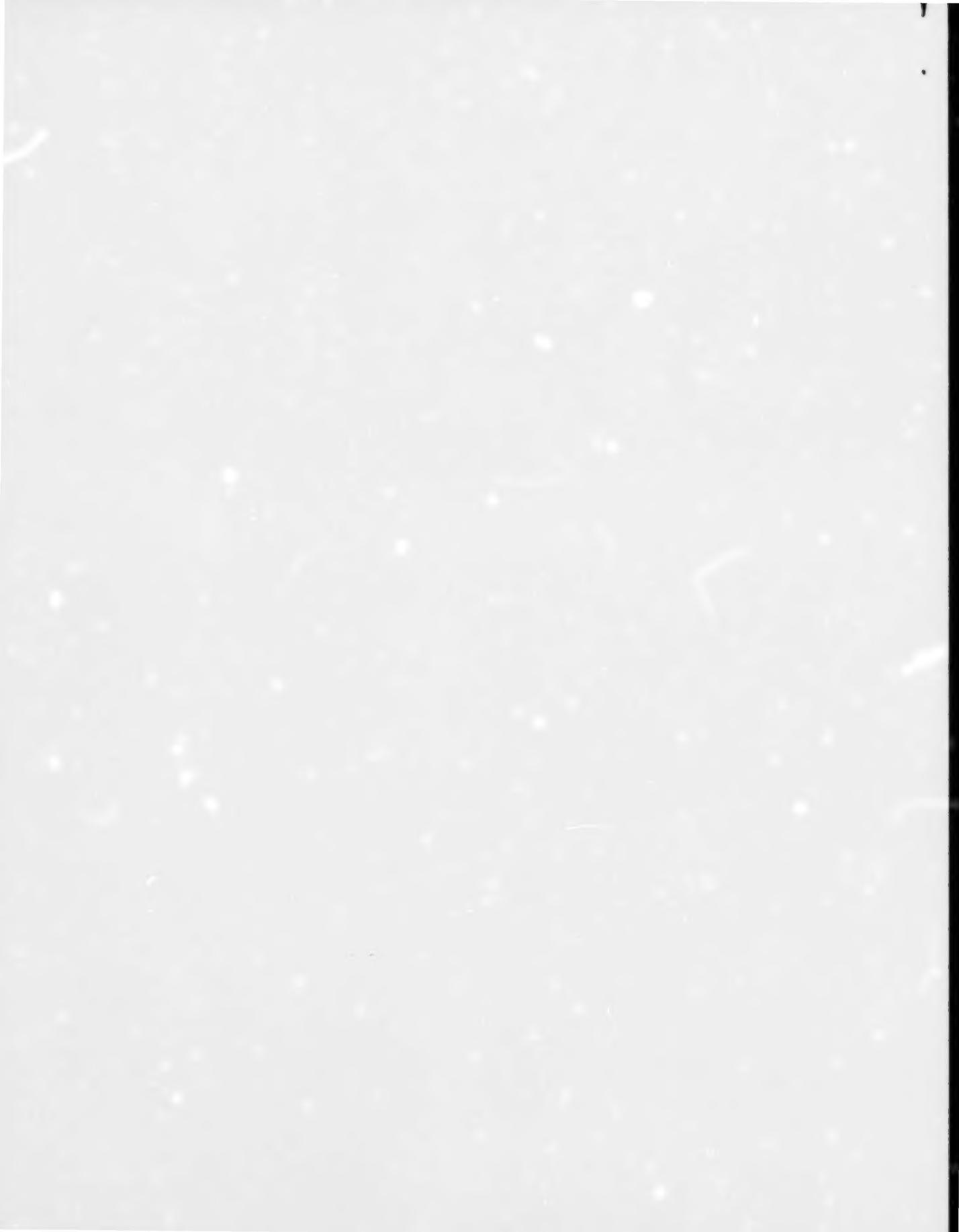
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**Presented By:**

Thomas Mielke  
Editor-in-Chief  
"Oil World"  
Hamburg, Germany

**Presented to:**

Grain World 2000  
Winnipeg, Manitoba  
February 28, 2000



## World Supply, Demand and Price Outlook for the Major Oilseeds and Vegetable Oils

*Presentation at the Grain World 2000 in Winnipeg, Canada;  
delivered by Thomas Mielke, Editor of OIL WORLD,  
Hamburg/Germany*

(For comments, questions and/or further background or statistical requests you are invited to contact <thomas.mielke@oilworld.de> directly or visit our Internet site <<http://www.oilworld.de>>)

### Introduction

Oilseed prices are still at a very low level, particularly for rapeseed and canola. Canola has been trading at unusual discounts vis-a-vis soybeans in recent months, reflecting the excessive world supplies.

I invite you today to discuss with me the major factors that will determine oilseed prices and farmers' income during the remainder of this year. Where are we going from here? Are the bearish supply factors fully discounted in today's prices? And what are the fundamental factors of world supply and demand in the medium term?

Let me take the opportunity to say some words about my company and our OIL WORLD publications. Located in Hamburg, Germany we have been analysing the world markets for oilseeds, all major oilseeds, animal and vegetable oils and fats as well as oilmeals since 1958. It is important to note that it is our policy that nobody within the company is allowed to take own positions in the market place, which, in our opinion would make it difficult to carry out objective analyses. (The opinion given could interfere with own positions.) We are very rigid in this policy and I want to point out that the opinion which I will deliver today is the result of in-depth and independent fundamental research.

Anybody who is not yet familiar with the OIL WORLD WEEKLY (released every Friday) or the OIL WORLD FLASH (daily) and the new MONTHLY, but wants to receive some sample copies is invited to either contact me personally or drop a message to my above-shown e-Mail address. Thank you.

### The Dependence on the World Market

Of course, the major price determining factors for Canadian oilseed producers come from the supply and demand developments on the world market. With the bumper crop of 8.8 Mn T last year

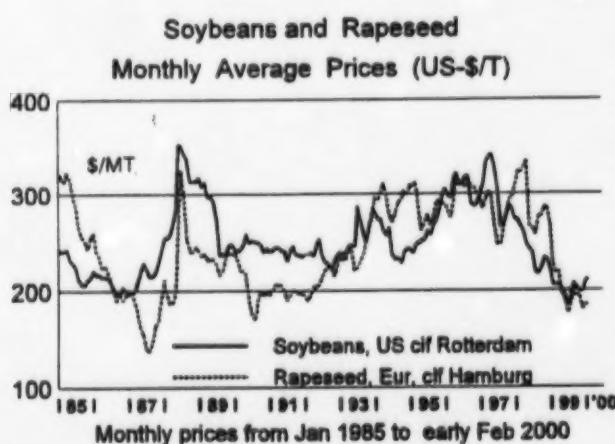
Canada is the second-largest producer after China, but still does not account for more than 21% of world rapeseed and canola production and for only 3% of world oilseed production.

Prices of rapeseed and canola are generally following soybeans. As shown in the graph, there has been high volatility in the price pattern during the past 15 years, which was dominated by soybeans as the major raw material accounting for 53% of world production.

Agricultural markets seem to be at a turning point. Shortly after reaching their lows in July, prices started to recover under the lead of soyameal and soybeans. They came under pressure during harvest time and again during December and the so-called February break (as in most preceding years). However, for the near to medium term our analysis shows that the basket of friendly or bullish factors should become stronger and outweigh the still existing bearish factors. The excess of global soybean demand over production and the likelihood of a pronounced decline in world soybean stocks by approximately 5.5 Mn T will be the decisive factor, apart from the tightening grain supplies.

Although prices already began in early August to face upward from their lows of last July (on the world market the lowest in 27 years for soybeans and in 24 for soyameal), they are still unusually low today. In fact, traditional indicators and price-determining factors (like demand, stocks and stocks/usage ratios) allow the conclusion that current prices are still undervalued.

It is our opinion that soybeans will be one of the price leaders upward in the medium term. Also rapeseed and canola prices are likely to recover in the next 3 months, though not due to their own fundamentals but rather benefitting from the tightening world supplies of soybeans.



## World Supply & Demand Outlook for Rapeseed and Canola

A record area and above-average yields in all major growing areas (except India) have boosted world production by 5.7 Mn T or 16% to a spectacular 41.7 Mn T. New record crops have been harvested in West and East Europe as well as in Canada, China and Australia.

Considering the higher carryin stocks, world supplies this season are up by as much as 6.9 Mn T. The excessive supply situation has been a major bearish factor that pushed prices of rapeseed and canola well below soybeans in order to stimulate demand.

### RAPESEED: World Supply & Demand (Mn T)

	99/00F	98/99	97/98	96/97	95/96
Open. stocks	3.4	2.2	3.2	4.2	3.1
Production	41.7*	36.0	33.1	31.0	34.6
EU-15 .....	11.4	9.5	8.7	7.3	8.2
E. Europe .....	2.7	2.0	1.6	1.3	2.3
Canada .....	8.8	7.6	6.4	5.1	6.4
U.S.A. .....	0.6	0.7	0.4	0.2	0.3
China .....	9.8	8.3	9.6	9.2	9.8
India .....	4.9*	5.0	4.7	6.3	6.1
Australia .....	2.4	1.8	0.9	0.6	0.6
Total supplies	45.1*	38.2	36.3	35.2	37.7
Disappearance	40.1*	34.8	34.1	32.0	33.5
End.stocks .....	5.0*	3.4	2.2	3.2	4.2
EU-15 (July 1)	0.8*	0.4	0.2	0.3	0.4
Canada (Aug 1)	1.9*	0.6	0.4	0.6	1.0
India (Oct 1)	1.7*	2.0	1.3	2.0	1.9
Japan (July 1)	0.1*	0.1	0.1	0.1	0.1
Stocks/usage (a)	12.6%	9.8%	6.4%	10.1%	12.6%

(a) Stocks in % of preceding 12 months' disappearance.

World consumption of rapeseed and canola will rise more sharply than expected by 5.3 Mn T and exceed 40 Mn T. This is mainly linked to the steep increase in crushings by around 3.0 Mn T or 32% in China. For the European Union we now estimate crushings to rise by 0.7 Mn T or 8%. But although well above previous expectations, world demand is not high enough to dispose of the record production, so that stocks will be up sizeably again by 1.6 Mn T at the end of this season. This is bearish, taken per se, although the surplus was not as huge expected earlier.

World imports of rapeseed & canola will approach nine million tonnes in July/June 1999/2000. The biggest boost will be in China, but good increases are also occurring in Japan, India, Pakistan and Bangladesh, which brings the Asian total to a record 6.74 Mn T, up sharply by almost 50% from last season.

		World	Imports (1000 T)		
		July /	June		
	99/00F	98/99	97/98	96/97	95/96
EU-15 .....	920*	835	316	428	886
East Europe .....	59*	32	138	382	49
Canada .....	110*	160	155	113	96
U.S.A. ....	220*	286	380	260	270
Mexico .....	820*	785	702	467	653
China, P.R. ....	3800*	2064	221	1	42
Japan .....	2260*	2112	2071	1951	1937
Bangladesh .....	255*	232	174	105	138
Oth. Asia .....	425*	163	60	14	26
Oth. countries .....	71*	72	47	34	42
Total .....	8940*	6741	4264	3755	4139

Canada still remains the world's largest exporter but its market share is being squeezed to only 45% vis-a-vis 70% three years earlier. Instead, Australia, the EU and East Europe have expanded their market shares.

		World Exports (Mn T)			
		July /	June		
	99/00F	98/99	97/98	96/97	95/96
Canada .....	3.97*	3.94	2.88	2.60	2.87
Australia .....	1.84*	1.32	0.59	0.28	0.35
EU-15 .....	1.78*	0.77	0.35	0.44	0.12
East Europe(a)	1.14*	0.51	0.36	0.29	0.74
Oth. countries .....	0.17*	0.27	0.13	0.11	0.08
World .....	8.90*	6.81	4.31	3.72	4.16

(a) Including exports from the former Republics of the USSR to 3<sup>rd</sup> countries.

Canadian disposals of rapeseed have stayed behind earlier expectations. No doubt, Canada is suffering from the stiff export competition of the European Union, East Europe as well as Australia and will only partly benefit from the surge in Chinese import requirements. My current export projection for the full season (August/July) is 4.05 Mn T, up only 4% from last season.

Secondly, Canadian crushers have been suffering from lower than expected world import demand for rape oil. Margins have been unsatisfactory, partly linked to the reduced rape oil import requirements of China and other countries. My present crush estimate of 3.0 Mn T for the current season is a 3-year low, but may still be on the high side unless oil export demand picks up.

As a result, the Canadian canola carryout as of end-July is likely to reach a burdensome 1.9 Mn T basis the current OIL WORLD assessment. I am aware that some of my Canadian business friends

are a bit more pessimistic and point to the possibility of somewhat lower Canadian disposals and consequently higher carryout stocks.

The prospects of such burdensome stocks should result in a sizeable cut-back in new-crop canola plantings in Canada this year.

CANADA : Supply and Demand of Canola (1000 T)

	A u g u s t /		J u l y			
	99/00F	98/99	97/98	96/97	95/96	94/95
<u>Open'g stocks...</u>	611	361	563	1030	597	330
<u>Crop.....</u>	8798	7643	6393	5062	6436	7228
<u>Imports.....</u>	120*	157	141	134	97	42
<u>Exports.....</u>	4050*	3906	2910	2542	2900	3968
<u>Crushings.....</u>	3000*	3062	3239	2726	2753	2513
<u>Other use.....</u>	579*	582	587	395	448	522
<u>Ending stocks...</u>	1900*	611	361	563	1030	597

## **The Major Factors Determining Canola Prices for the Remainder of this Year**

I pointed out above that the old-crop supply fundamentals for rapeseed and canola are still bearish. However, it is my assessment of the current global situation that canola prices will recover in the second half of the Canadian season, which is Febr/August 2000. This is only partly linked to its own fundamentals, but mainly to the constructive or bullish impacts from other oilseeds as well as from palm oil.

Canola prices have already shown some signs of stabilization and recovery. Let me explain why I think that the prices of rapeseed should recover from current levels in the months ahead.

### **1) New-Crop Production Prospects for Rapeseed and Canola**

In my tentative outlook for next season, I anticipate a reduction in world output by around two million tonnes as compared to this season's record level of 41.7 Mn T. Farmers, frustrated with prices and the outlook for still burdensome supplies at the end of this season, as well as owing to rotation requirements are likely to cut back rapeseed and canola plantings in many parts of the world.

In the European Union we have already seen a reduction in winter rapeseed sowings by almost one-tenth and if normal weather is experienced from now on, the EU rapeseed output should decline by around 1.3 Mn T this summer.

In Poland and some other East European countries winter plantings have also been cut sizeably and total production is likely to fall by around 0.4 Mn T.

In China winter plantings are reported to have been sharply expanded by 10-15% and if that is confirmed, a record Chinese production of more than 10 Mn T is possible this summer.

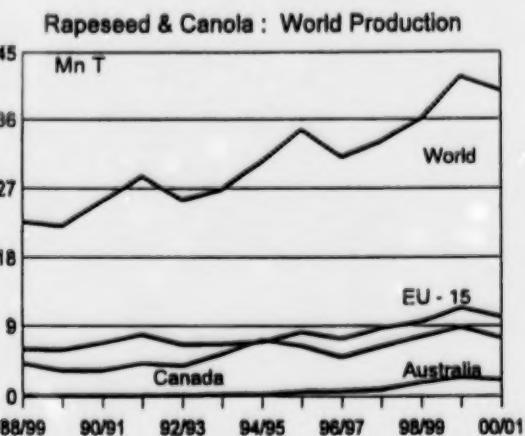
Australian producers are expected to cut back canola cultivation for the next crop.

Finally, Canada may see a notable cutback in canola sowings

by at least 10 (probably 15)%.. My current preliminary working estimate for Canada is around 7.5 Mn T for this summer.

Although world carryover stocks will be burdensome, my forecast for next season's production (suggesting a decline of around two million tonnes) would result in a slight reduction in world supplies of rapeseed and canola next season.

This expectation is going to have a supportive impact on prices, although it will have to be monitored to what extent the actual developments will deviate from these preliminary estimates. (We will keep our readers informed in both OIL WORLD FLASH and WEEKLY as well as in our new MONTHLY.)



## 2) Strong Chinese Demand

China as the most populous country with presently 1.2 Bn people is showing considerable annual demand growth in the food industry. Changing diets and rising caput demand for vegetable oils and livestock products are further widening the domestic supply gap in the country. During the past 12 months we saw a major change in the import structure in favour of oilseeds and at the expense of importation of oils and oilmeals.

Chinese imports of soybeans and rapeseed/canola will far exceed earlier expectations. The preference for oilseed imports is linked to the desire to utilize the existing interior crush capacity. China reportedly bought 0.7-0.9 Mn T of soybeans during the first 22 days of February. The bulk will be shipped from the USA and 0.2-0.3 Mn T from South America.

Total Chinese oilseed imports are forecast at a spectacular 8.7 Mn T in Oct/Sept 1999/2000, making the country the by far largest oilseed importer in the world. Our new forecast reflects an upward revision by 0.55 Mn T from our Monthly of January 21 and is up steeply from the 6.4 Mn T imported last season and only 0.8 Mn

T four years ago. Rapeseed accounts for most of the increase and our new projection is for an import volume of 3.8 Mn T in Oct/Sept 1999/2000, of which already 1.45 Mn T arrived during Oct/Dec. Soybean imports are now seen increasing to 4.85 Mn T, thereof already 1.77 Mn reported for Oct/Dec.

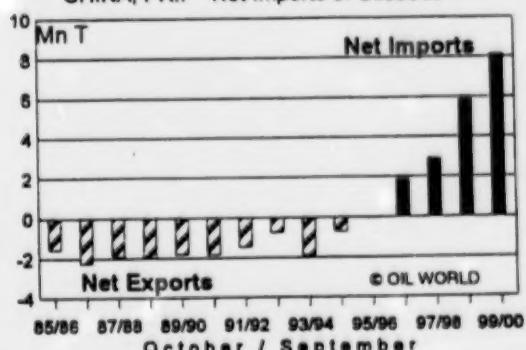
#### CHINA: Oilseed Crushings & Imports (1000 T)

	October / September				
	99/00F	98/99	97/98	96/97	95/96
<b>Crushings</b>					
Soybeans..	12600*	11250*	10200*	8500*	7100*
Cottonseed	6250*	7250*	7385*	7015*	7340*
Groundnuts	5220*	5050*	4040*	4110*	4250*
Rapeseed..	12700*	10130*	8800*	8610*	8710*
Oth. seeds..	1650*	1715*	1505*	1700*	1542*
<b>Total.....</b>	<b>38420</b>	<b>35395</b>	<b>31930</b>	<b>29935</b>	<b>28942</b>

#### Imports

Soybeans..	4850*	3858	2944	2350*	795
Rapeseed..	3800*	2525*	3115*	1	41
Other.....	53*	52*	33*	18*	8*
<b>Total.....</b>	<b>8703</b>	<b>6435</b>	<b>3292</b>	<b>2369</b>	<b>844</b>

#### CHINA, PR.: Net Imports of Oilseeds



Oilseeds crushings in China are apparently increasing steeply by around 3 Mn T in the second consecutive year. According to latest OIL WORLD estimates a volume of 38.4 Mn T will be processed in the current season. This represents a spectacular expansion by almost ten million tonnes within four years. Although reliable information on the crush capacity is not available, we conclude that the current dramatic expansion will push the Chinese crush volume to a level not very far from the currently existing crush capacity.

**Impacts:** The Chinese purchases have contributed to booming world exports of soybeans & rapeseed.

The accelerating crushings will lead to much higher interior production of oil and meal. This has reduced the country's oilmeal import requirements. For soyameal we now expect Chinese imports to decline to at best 1.0 Mn T this season, down from 1.5 Mn T imported last season and the lowest in 5 years.

Imports of seed oils are falling sharply, too. We estimate rape oil imports at only 70 Thd T (against 205 last season) and soyaoil at only 820 Thd T (vs. 973). Our latest estimates were presented in the OIL WORLD MONTHLY of February 25. (It would be my pleasure to airmail a sample copy to you.)

### 3) World Output of Soybeans to Decline Sharply in 1999/2000

Soybeans are running into a pronounced production deficit this season, requiring a considerable drawdown of stocks by approximately 5.5 Mn T from a year ago as of end-August 2000. Soybean production is declining this season in all major producing countries -- down by 2.7 Mn T in the USA, by a combined 2.0 Mn T in South America, by 0.7 Mn T in China and it is down also in India, Europe and Africa.

In our revised projection we peg world soybean output at 153.4 Mn T, a three-year low and down by almost six million tonnes from last season.

Recent favourable rainfall in Argentina and parts of Brazil have prevented a more severe crop shortfall and improved soybean crop prospects. In some areas the rains arrived too late. At other places they came in the last minute (after 5 or 6 months of drought).

We have now raised our soybean production forecast for the 3 major South American countries by a combined 0.9 Mn T to 52.2 Mn T. But this is still 2.0 Million T below last year's level. For Argentina we are now looking at a crop of 19.4 (against 19.8 last year), for Brazil 30.3 (31.3) and for Paraguay 2.5 (3.1).

#### SOYBEANS : World Supply & Demand Balance (Mn T)

	Forecasts				
	1999/2000		98/99	97/98	96/97
	Feb 25	Jan 21			
Opening stocks	32.98*	32.03*	30.51	17.61	22.33
Production	153.42*	152.51*	159.32	158.52	132.15
U.S.A.	71.93	71.93	74.60	73.18	64.78
S.America(b)	52.20*	51.30*	54.23	55.42	41.10
Oth.countries	29.29*	29.28*	30.49	29.93	26.27
Total supplies	186.40*	184.54*	189.83	176.13	154.49
Disappearance	158.88*	157.54*	156.85	145.63	136.88
Ending stocks	27.52*	27.00*	32.98	30.51	17.61
U.S.A.	8.16*	8.35*	9.47	5.44	3.59
Brazil	8.40*	8.20*	10.23	10.59	5.90
Argentina	7.43*	7.00*	8.72	9.95	4.54
Stocks/usage(a)	17.3%	17.1%	21.0%	20.9%	12.9%

(a) Stocks in % of preceding 12 months' disappearance.

(b) Argentina, Brazil & Paraguay.

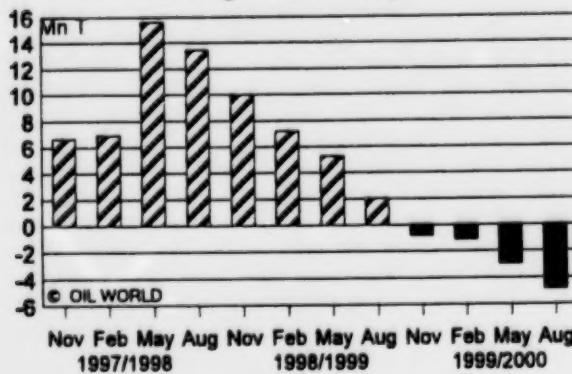
#### 4) Soybean Stocks Declining in 1999/2000

Following two years of excessive production and inventory building, world soybean stocks will be declining sizeably this season. Due to the record imports mainly of China but to a smaller degree also of South Korea, Taiwan, Mexico and other countries, world demand for soybeans will be higher and ending stocks lower than expected.

World soybean stocks at the start of the current season as of early September 1999 were still up sharply by 2.5 Mn T. But with demand exceeding production, they have subsequently been reduced and are currently down by approximately 2 Mn T from last year.

The current OIL WORLD forecast for this season's ending stocks is 27.5 Mn T, which is down sharply by 5.5 Mn T from a year ago. This represents 17.3% of annual usage, down sizeably from about 21% in both of the past two years.

**Soybeans : Quarterly World Ending Stocks**  
**Change from Year Ago**



Our new forecast for the US soybean carryout is 8.16 Mn T or the equivalent of 300 Mn bu as of end-August. As world demand has shifted in favour of soybeans (at the expense of soya oil and meal), we have raised our US soybean export projection by almost 0.5 Mn T to a record 25.2 Mn T for Sept/August 1999/2000 (against 22.35 last season). At the same time we reduced the crushing projection to 43.9 Mn T (vis-a-vis 44.2 previously and 43.3 last season).

However, any price recovery caused by the old-crop constructiveness should only be moderate as long as the new-crop outlook for US soybeans remain favourable. Although I consider the USDA projection of a soybean crop of 2960 million bushel (presented at the Febr 25 Outlook Forum) as too high at this stage, favourable weather and a recovery in yields coupled with about unchanged or slightly higher acreage would raise the US soybean crop to around 2850 - 2900 million bu.

U.S.A. : Soybean Balance (Mn T)

	September/August			Sept/Feb	
	99/00F	98/99	97/98	99/00	98/99
<u>Open'g stocks.</u>	9.47	5.44	3.59	9.47	5.44
<u>Crop .....</u>	71.93	74.60	73.18	71.93	74.60
<u>Imports.....</u>	.16*	.12	.16	.08*	.07
<u>Exports.....</u>	25.20*	22.35*	24.26*	16.61*	14.07*
<u>Crushings.....</u>	43.90*	43.26	43.44	22.87*	22.26
<u>Other use.....</u>	4.30*	5.07*	3.78*	3.50*	4.11*
<u>Ending stocks.</u>	8.16*	9.47	5.44	38.50*	39.66

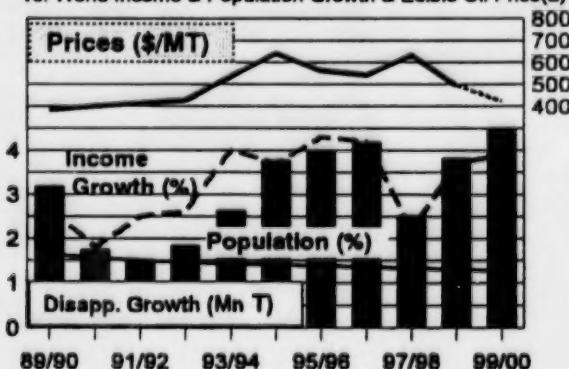
### 5) Strong Demand for Oils & Fats

Worldwide the oils and fats industry indeed represents one of the fastest growing markets. At first sight this statements may be a bit surprising to those who have been lulled into the pessimistic views and market gossip that world consumption of oils and fats is poor.

But I want to assure you that this is not true. It takes too much time to present all the individual growing markets on this occasion, but let us focus on some of the key features confirming the current unusually strong demand situation.

In the current season total world consumption of the 17 oils & fats covered by OIL WORLD will rise by around 4-5% or approximately 4.5-4.8 Mn T. This is an acceleration of the already dynamic growth of 3.8-4.1 Mn T annually between 1994/95 and 98/99, as summarized in the graph. The exception was 1997/98, when demand growth was unusually small at only 2.5 Mn T, owing to high market prices as well as the economic recession in Southeast Asia.

17 Oils & Fats: Annual World Disapp. Growth  
vs. World Income & Population Growth & Edible Oil Price(a)



(a)Annual average price of soya oil Dutch, fob ex-mill, rape oil fob ex-mill Hbg & crude palm oil (cif Rott).

The pronounced improvement from last season is due above all to the unusually low prices for vegetable oils, the higher income growth in many developing countries and the sharply increased usage of rape oil for biodiesel production in Europe. In Oct/Dec 1999, for which fairly reliable data are available, the total world demand already increased by 1.3 Mn T and a further sharp increase (based mainly on January data) is indicated for the current quarter.

In the EU we now forecast total disappearance of the 17 oils & fats to rise 0.50 Mn T. This will be due mainly to a much larger than expected increase in the usage of rape oil for biodiesel production. Owing to the sharp rise of mineral oil prices total rape oil disappearance increased sharply last quarter, viz. by 0.22 Mn T - the larger part of it for biodiesel production. Rape oil demand also

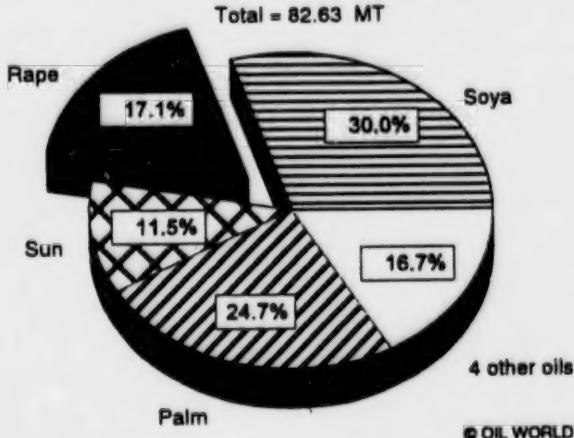
benefited from reduced consumer demand for soya oil due to concerns that it may be produced from GMO soybeans. A further significant increase is expected. This will siphon off a large share of the record world rape oil production growth.

Sizeable increases are also anticipated for China by 0.8 Mn T, India by 0.8 Mn as well as for Malaysia, Indonesia and several other countries in this emerging region, where economic growth has improved beyond expectations in recent months.

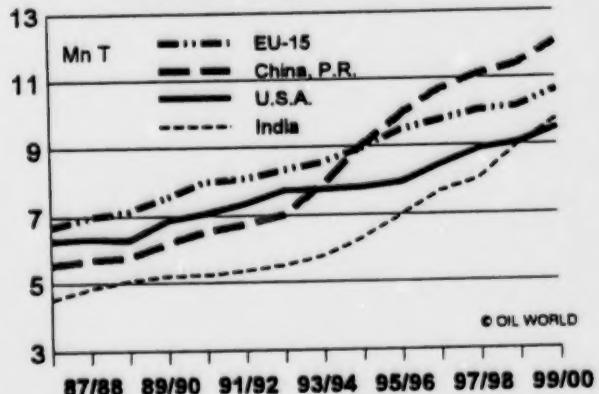
## 6) The 8 Major Oils

Soybean oil and palm oil are clearly the growth leaders. Within the group of major oils, soybean oil will account for around 30% of world consumption, down slightly from last season. Palm oil has grown in importance in recent years and its share is seen reaching 25% this season. Rape oil consumption is seen rising sharply by 1.5 Mn T this season, based on its high availability and the maintenance of price discounts. Rape oil is expanding its share somewhat from preceding years and will cover around 17% of world disappearance this year.

**8 OILS : Shares of World Consumption  
in 1999/2000 (in percent)**



**8 OILS & FATS  
Diverging Disappearance Trends**



China and India are good examples of rapidly growing markets: During the 5 years up to the current season, domestic disappearance of the major oils is seen increasing by 0.8 Mn T or 8.6% in India and 0.65 Mn T or 5.7% in China, thereby outpacing the average world demand growth of 5.9% in this period.

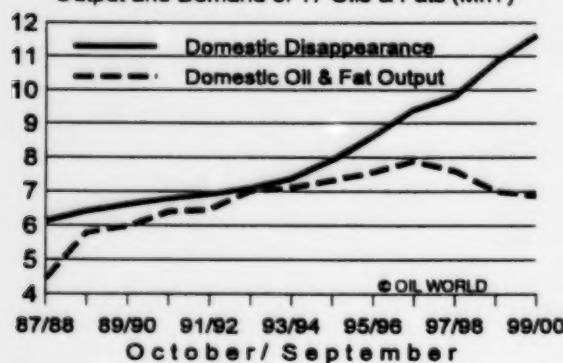
As a result, the two countries combined will account for around 27% of world consumption this season, as compared to a share of 23% five years ago.

### 7) Widening Domestic Supply Gap in India

Interior production in India has fallen short of expectations and well below trend. After favourable growth registered in the late eighties and early nineties, India became almost self-sufficient in oils and fats in 1992 and 1993. However, production is now on a declining trend, this season for the third year in a row. It is mainly the yields per hectare which have fallen short of trend and we hear more and more concern about insufficient moisture and a decline in groundwater to critically low levels (partly as low as 60 metres in certain regions) which has contributed to the declining trend in productivity. India has emerged as the world's largest importer of oils and fats, taking 4.5 Mn T last season, of which 2.75 Mn palm oil, 0.84 Mn T soya oil, 0.55 Mn sunflower oil and 0.23 Mn T rape oil.

#### INDIA: Widening Domestic Supply Gap

Output and Demand of 17 Oils & Fats (MnT)



On the other hand, Indian interior consumption increased steeply by 1.0 Mn T last season. Although demand growth is likely to slow down in 1999/2000, India will need to import at least 4.8, probably 4.9 Mn T of oils & fats in the current season. Prices are still very low (stimulating demand) and the government is still pursuing a liberal economic policy. Import duties have been raised recently but in the current situation they can still be regarded relatively moderate and at the current level of prices they will not curb the import and domestic demand expansion this season.

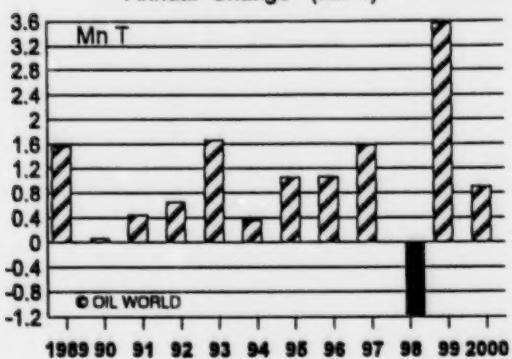
### 8) Palm Oil Production Growth Slowing Down This Year

No doubt, palm oil was the major bearish factor during the past 12 months and mainly responsible for the plummeting prices of vegetable oils and oilseeds. Led by Malaysia and Indonesia, world palm oil production increased steeply by 3.9 Mn T or 21% in calendar year 1999. This was far above earlier expectations, partly linked to higher mature area and partly to sharper than expected growth in productivity per tree.

You can imagine that such a boost in world palm oil production could not be consumed, so that world palm oil stocks at the end of December 1999 accumulated to 3.5 Mn T (up 0.7 Mn from a year ago). The palm oil fundamentals remained bearish in the first 6 weeks of this calendar year but will become more and more constructive for the remainder of the year.

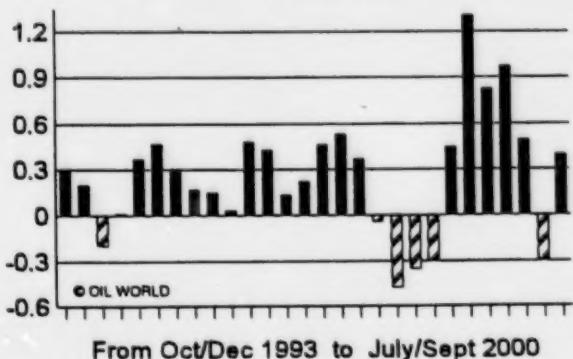
#### Palm Oil : World Production

Annual Change (Mn T)



#### Palm Oil : Quarterly World Production

Change from Year Ago (Mn T)



The biological life of the palm tree is very complicated and sophisticated modelling is necessary to understand the various impacts of changing weather conditions on the initiation of inflorescences (36 months before harvest), the sex determination -- male or female -- (25 months) and the development of the fruit bunches together with the rate of abortion (about 10 months) and the final production. Also, trees have a biological yield cycle, partly determined by stress caused by detrimental weather conditions or preceding overproduction.

Our expectations for April/June are for a decline in world palm oil production by 0.3 Mn T from last year in April/June 2000. For the full calendar year we currently forecast world production to rise by only 0.9 Mn T, which is below average and will contribute to a decline in world palm oil stocks during January/December 2000.

#### 9) Total Oil Production Growth to Slow in Jan/Sept 2000

Seed oil production growth cannot fully offset the slack in palm oil. The prospective production increase of the 7 major seed oils in Oct/Sept 99/00 by 3.20 Mn T looks high as it is more than double the growth registered last season. Production of rape oil is seen increasing very sharply by 1.80 Mn T and of coconut oil by 0.68 Mn T, but that of soybean oil is seen rising only 0.44, of sun oil 0.35 and of palmkernel oil 0.17 Mn T. Output of cotton oil is virtually stagnating and that of groundnut oil declining by 0.29 Mn T.

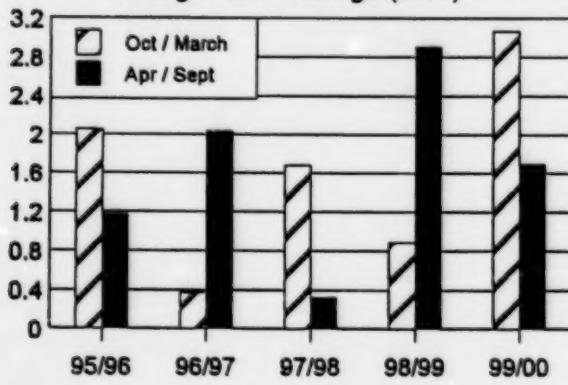
But further analysis reveals a major shortcoming in the first half of this calendar year when palm oil production is expected to rise only a meagre 0.2 Mn T. The output of the 7 seed oils will then probably increase by 1.9 Mn T, which is a good increase, but not enough to prevent a decline in world stocks of oils & fats. This may at first glance look surprising, considering the prospects for still relatively large carryover stocks of soybeans in the US and of rapeseed in Canada and the European Union at the end of this season. However, the following two reasons will probably prevent larger crushings:

- First, global demand growth for soybean meal remains comparatively slow, so that a larger increase in crushings would hurt the crush margins.
- Second, in view of the prospective decline in their 2000/01 crops, rapeseed growers in Canada and Europe are reluctant sellers. They are thus keeping prices high and crush margins low.

As a result of the prospective inability of seed oil output to increase more sharply, the combined year-on-year production growth of the 8 oils including palm oil will slow pronouncedly from 1.72 Mn T in Oct/Dec 1999 to 1.34 Mn T in Jan/March, to around 0.79 Mn T next quarter and 0.91 in July/Sept. This steep decline of the growth is due exclusively to palm oil.

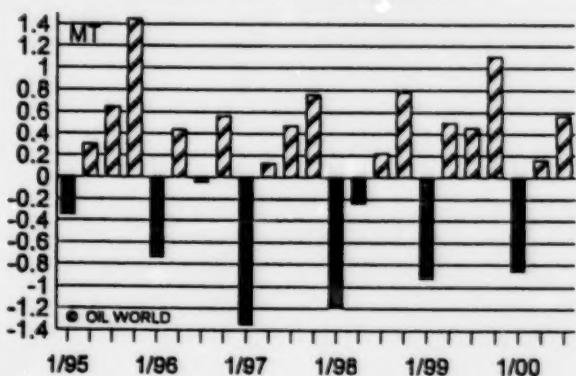
## 8 MAJOR OILS: Half-Yearly World Output

Change from Year Ago (Mn T)



8 Oils : Quarterly World Production

Excess or Deficit vs Disappearance



As it is far below the prospective growth of disappearance it will have its impact on stocks as well as on prices. For Jan/Sept 2000 we now forecast the total world production to increase only by 5.2% on the year compared with 8.7% in Oct/Dec 1999. But we cannot preclude the possibility that we have to revise these figures upward in our next forecasts.

## 10) Oil Production Deficits Still Looming in Jan/Sept 2000

A large production deficit is shaping up for the current quarter, basing the official or other reliable data are already available for us. We at OIL WORLD now estimate the world production to turn out 0.9 Mn T below disappearance in Jan/March. Two-thirds of the deficit will

For the next two quarters we forecast moderately growing seasonal surpluses of 0.2 and 0.6 Mn T. Next quarter it will be mainly in soybean oil and during July/Sept in palm and soybean oils.

For January/September 2000 we now forecast a production deficit of 0.15 Mn T compared with 0.47 Mn T a month ago.

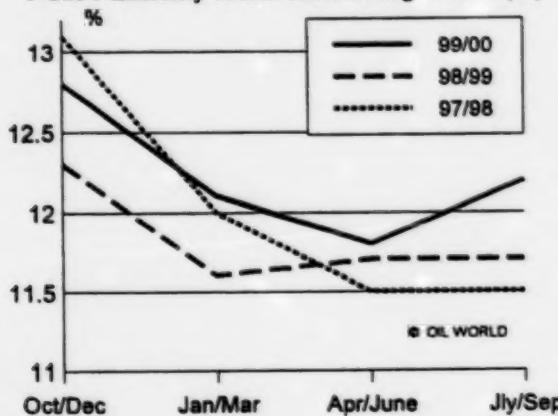
### 11) Stocks and Stocks/Usage Ratio Set to Decline Sharply this Quarter and Moderately Next

For the current quarter we now expect the world stocks of the eight oils to fall seasonally by 0.7 Mn T compared with our estimate a month ago of 0.9 Mn T. This is the same reduction as in Jan/March 1999. The decline will be mainly on account of palm and soybean oils.

Consequently we expect the quarterly stocks/usage ratio to fall from the relatively high 12.8% last quarter to 12.1% this quarter and 11.8% in April/June 2000. While the first two ratios will each still be 0.5 percentage points above a year ago the latter will be up only 0.1 percentage points.

But the constructiveness in oils and fats is dampened by the outlook of a good recovery in global stocks in the July/September quarter.

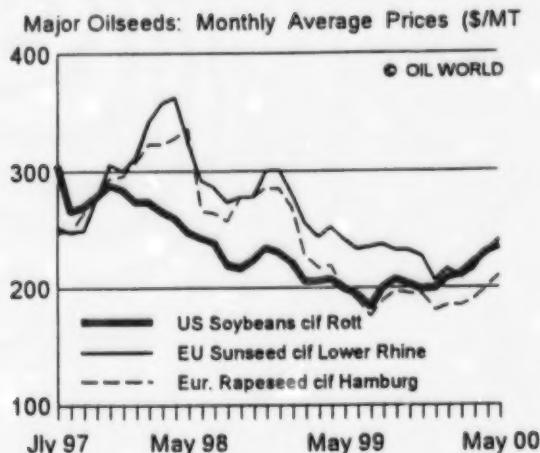
8 Oils : Quarterly World Stocks/usage Ratios(%)



### Conclusions

- The reduction of world soybean stocks that is currently under way will accelerate in the second half of the season. This results from a considerable production deficit and is expected to reduce the stocks/usage ratio to a 3-year low. The South American production is still a variable but it will not change the fundamentally tightening soybean supplies.

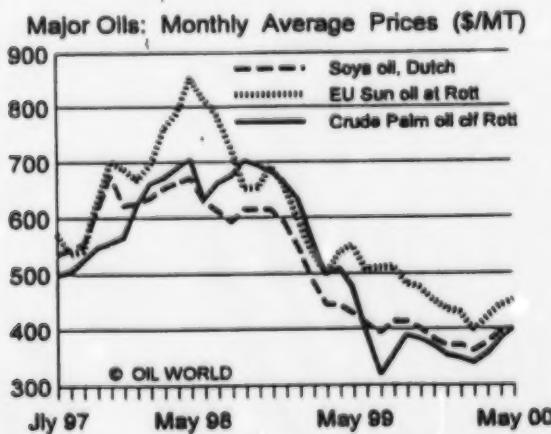
After the not unusually "February break" we at OIL WORLD projected in our new Monthly (released on Febr 25) that soybean prices would recover to about an average US \$ 220 in March (cif Rotterdam), to around \$ 230 in April and \$ 235 in May. The new-crop prospects will then gain importance as price-making factors but the current fundamentals suggest a further gradual strengthening of prices also beyond April.



- The price prospects for rapeseed are less constructive than for soybeans. As opposed to soybeans, world rapeseed stocks and the stocks/usage ratio are increasing pronouncedly this season. Therefore rapeseed prices can follow soybeans only at a distance. The differing fundamentals require that for the time being rapeseed and canola remain at a sizeable discount.

- Subsiding supply pressure from palm oil. World demand will exceed monthly palm oil production sizeably by about 0.6 Mn T in January/June 2000, according to revised OIL WORLD forecasts. This is likely to lead to a strengthening of crude palm oil prices from the February average of only \$ 340 (cif Europe) probably \$ 380 - 400 in April or May. World palm oil production will show a much lower increase this calendar year than in 1999, which will raise the world market dependence for other oilseeds and oils.

Due to its higher availability, especially rapeseed oil is in a premier competitive position to expand its market share. At the current very low prices demand is accelerating not only for food but also for technical purposes in the chemical industry as well as in Europe for bio-diesel. This will help to dispose the surplus. Rape oil prices will follow soya and palm oil, but at a distance.



# **SPECIAL CROPS OUTLOOK**

**Presented by:**

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**Market Analysis Division**

**Adaptation and Grain Policy Directorate**

**Policy Branch**

**Agriculture and Agri-Food Canada**

**Presented to:**

***Grain World***

**February 28, 2000**

**Winnipeg, Manitoba**

## CANADA: SPECIAL CROPS PRODUCTION Distribution by Province

1999-2000 BC AB SK MB ON QC

..... percent .....

Dry Peas	*	24	72	4	*	*
Lentils	-	2	97	1	-	-
Dry Beans	-	15	3	41	36	5
Chick Peas	-	5	95	-	-	-
Mustard Seed	-	15	84	1	-	-
Canary Seed	-	4	91	5	-	-
Sunflower Seed	-	3	29	68	*	-
Buckwheat	-	*	*	70	24	6

\* minor production

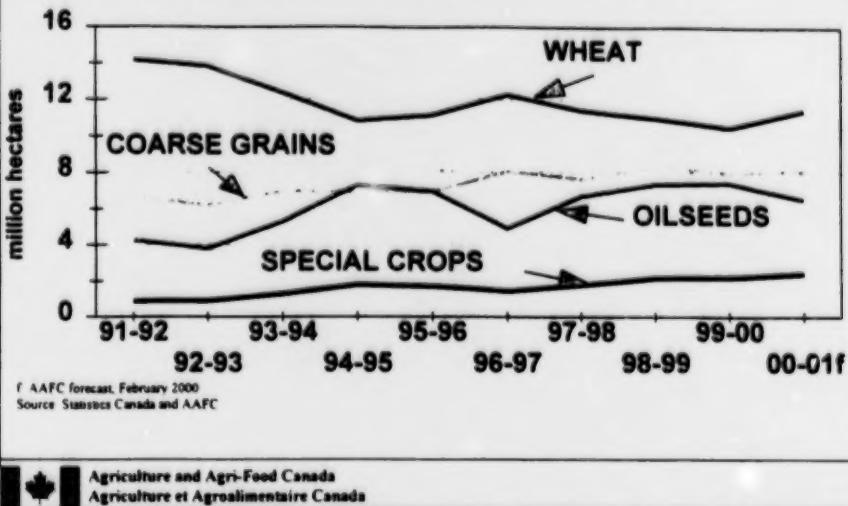


Agriculture and Agri-Food Canada  
Agriculture et Agroalimentaire Canada

### Canadian Special Crop Production

Canadian special crop production is very diversified, consisting of more than twenty crops. However eight crops account for more than 95% of Canadian special crop production, with dry peas accounting for about 55% in 1999-2000. These crops are: dry peas, lentils, dry beans, chick peas, mustard seed, canary seed, sunflower seed and buckwheat. Other special crops produced in Canada are: fababeans, caraway seed, coriander seed, borage seed, safflower seed, triticale, spelt, hemp, millet, dill seed, kamut and quinoa. Canadian special crop production is concentrated in the Prairie provinces and Ontario.

## CANADA: AREA SEEDED Grains, Oilseeds and Special Crops



The area seeded to special crops increased by 150% from 0.87 million hectares (mhn ha) in 1991-1992 to 2.19 mhn ha in 1999-2000, while the area seeded to wheat decreased by 25%, and the area seeded to coarse grains and oilseeds increased by 20% and 75% respectively.

In 1991-1992, special crops accounted for 3.5% of total area seeded to grains, oilseeds and special crops, but by 1999-2000 special crops' share of the seeded area increased to 8%.

The area seeded to special crops is influenced by the returns from grains and oilseeds during the previous crop year. When the wheat and coarse grain prices increased in 1995-1996, the area seeded to special crops decreased in 1996-1997.

Most of the increase in seeded area for special crops was due to a large increase in the area seeded to dry peas, but the area seeded to most other special crops also increased. Seeding of chick peas started in 1995.

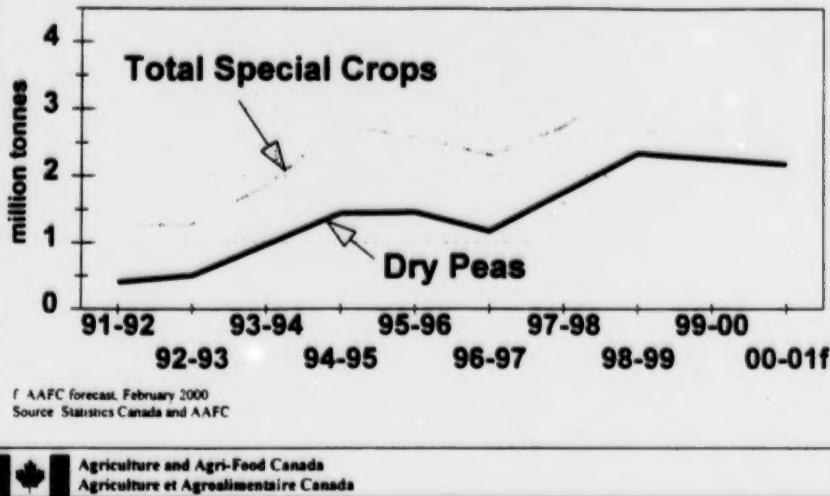
### 1999-2000

Area seeded to special crops increased marginally to 2.19 mhn ha, as seeded area shifted from wheat and coarse grains to special crops and oilseeds.

### 2000-2001

Area seeded to special crops is forecast to increase by 8% to 2.40 mhn ha with some shifting out of oilseeds. Increase of dry peas, lentils, dry beans, chick peas, sunflower seed and buckwheat area is only partially offset by decreased seeded area of canary seed and mustard seed.

## CANADA: SPECIAL CROPS Production



Total special crop production increased by 220% during the period 1991-1992 to 1999-2000 from 1.27 million tonnes (Mt) to 4.07 Mt. Dry peas accounted for most of the growth, with production increasing by 450%. The increase in production is due mainly to increased seeded area, but there also has been about a 15% increase in average yields during this period.

Since 1991-1992, about two-thirds of the special crops produced in Canada have been exported. In addition, there are exports of products made from special crops.

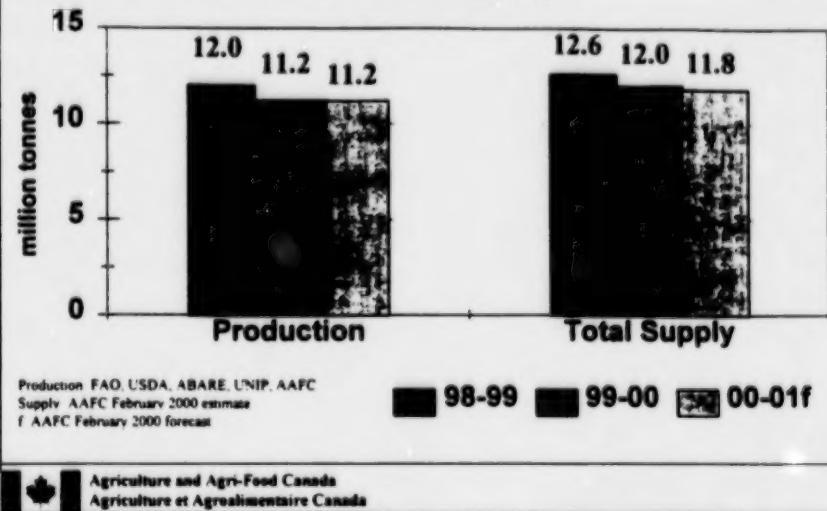
### 1999-2000

Production of special crops increased by 11% from 1998-1999 to a record 4.07 Mt due mainly to higher yields. Although exports and domestic use are forecast to increase, carry-out stocks are expected to increase by 35% from 1998-1999.

### 2000-2001

Production is forecast to decrease slightly to 3.99 Mt due to lower trend yields, which are significantly lower than last year's actual yields. Total supplies are expected to increase marginally due to higher carry-in stocks. Exports are forecast to increase, while domestic use remains stable. Carry-out stocks are forecast to decrease by 10%.

## WORLD: DRY PEA Production and Total Supply



### 1999-2000

World dry pea production decreased by 7% to 11.2 Mt due mainly to lower production in the EU.

Total supply decreased by 5% to 12.0 Mt.

### 2000-2001

World dry pea production is forecast to remain stable, but total supply is expected to decrease due to lower carry-in stocks.

## CANADA: DRY PEAS

### Supply and Disposition

	98-99	99-00	00-01f
thousand hectares			
<b>Harvested Area</b>	<b>1,078</b>	<b>835</b>	<b>956</b>
thousand tonnes			
<b>Carry-in Stocks</b>	<b>150</b>	<b>280</b>	<b>320</b>
<b>Production</b>	<b>2,337</b>	<b>2,252</b>	<b>2,170</b>
<b>Domestic Use</b>	<b>680</b>	<b>772</b>	<b>820</b>
<b>Exports</b>	<b>1,537</b>	<b>1,450</b>	<b>1,500</b>

f: AAFC forecast, February 2000

Source: Statistics Canada and AAFC



Agriculture and Agri-Food Canada  
Agriculture et Agroalimentaire Canada

#### 1999-2000

In Canada, production decreased by 4% to 2.25 Mt, as a 23% decrease in area was mostly offset by much higher yields.

Domestic use, largely for livestock feed, is forecast to increase by 13%. Use of peas for livestock feed is increasing due to growing acceptance of peas for feed and a stable supply. Feed peas are used mainly for hog rations in the Prairie provinces.

Exports of Canadian peas are expected to decrease by 5%, due to decreased demand from Asia.

Carry-out stocks are expected to increase to 320,000 t, with a stocks-to-use ratio of 14%.

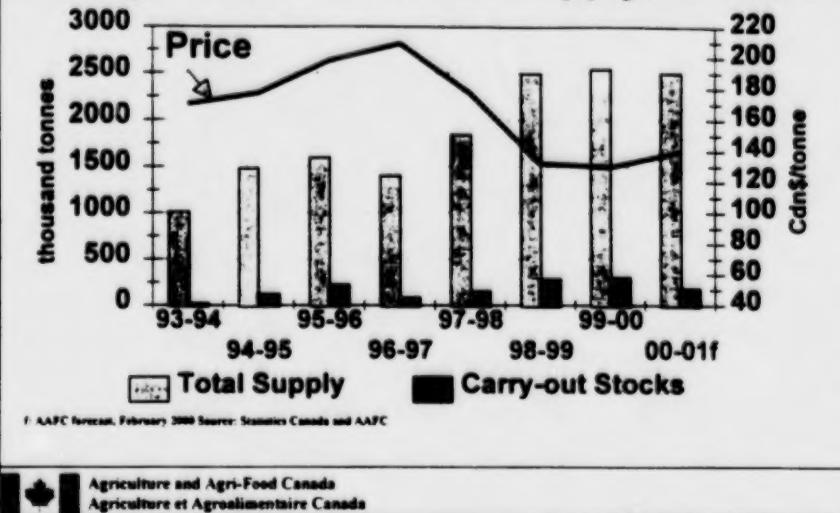
#### 2000-2001

In Canada, production is expected to decrease slightly to 2.17 Mt as a 15% increase in area is offset by trend yields which are significantly lower than the 1999-2000 yields. Total supply is forecast to decrease marginally.

Domestic use and exports are forecast to increase moderately as total supply becomes tighter. Carry-out stocks are forecast to decrease to 180,000 t, with a stocks-to-use ratio of 8%.

## CANADA: DRY PEAS

### Average Farm Price, Total Supply, & Stocks



#### 1999-2000

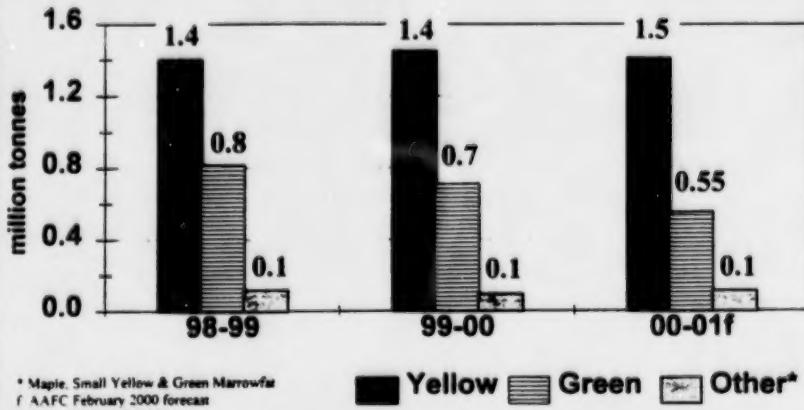
The strong demand for feed peas has decreased the premium for food peas relative to feed peas from about \$20/t in 1998-1999 to about \$15/t in 1999-2000. Prices for food quality yellow peas are on average about \$5/t higher than for green peas. The average price over all types, grades and markets is forecast to be similar to 1998-1999 at \$120-140/t.

The Winnipeg Commodity Exchange launched a new field pea futures contract on April 5, 1999. Pricing for the new contract is free on board (FOB) in the Par region (locations in Manitoba, Saskatchewan and Alberta, excluding the Peace River region). The contract is traded in Canadian dollars and the trading months are February, April, June, August, October and December. This contract replaced the FOB Rotterdam contract.

#### 2000-2001

Food pea prices are expected to strengthen due to lower world supply. Feed pea prices are forecast to increase marginally, because of lower supplies of dry peas and higher expected protein meal prices. The average price is forecast to rise by 5-10% to \$125-155/t.

## CANADA: DRY PEAS Production by Type



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### **1999-2000**

Production of yellow peas increased by 4%, whereas production of green peas decreased by 13%.

### **2000-2001**

Production of yellow peas is forecast to increase by nearly 10%, while production of green peas is forecast to decrease by 20%.

## DRY PEAS: PRICE COMPARISON

### Dry Peas versus Alternative Feed Sources

	Feed Peas	Soymeal/Corn*
	price (Cdn\$ / tonne)	
Winnipeg	140	160
Saskatoon	130	170
Calgary	140	185

\* ratio consisting of 1/3 soymeal and 2/3 corn

Feed mill prices, February 2000

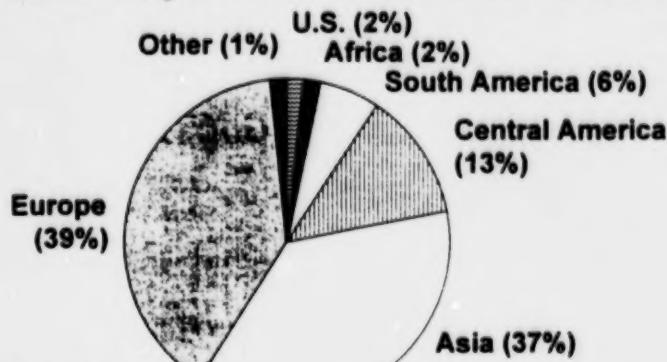


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At current prices, peas are a very economical source of livestock feed. For example, compared to a mixture of corn and soybean meal, feed pea prices in the Prairie provinces are \$20-45 per tonne/t) lower. Protein from peas and canola meal are nutritionally complementary, enhancing each others value when used in rations. Canadian dry pea production is now large enough to provide a stable source of livestock feed.

## CANADA: DRY PEAS

**1999-2000f Exports = 1.45 million tonnes**



f AAFC forecast, February 2000  
Source: Statistics Canada and AAFC  
Other includes: Middle East, Oceania



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### **1999-2000**

Dry pea exports are expected to decrease to 1.45 Mt, due to lower exports to Asia.

Exports to Europe are generally feed peas. Peas are used extensively for livestock feed in Europe, especially for feeding hogs. Spain accounts for most of the peas exported to Europe, with Belgium and Netherlands taking most of the balance.

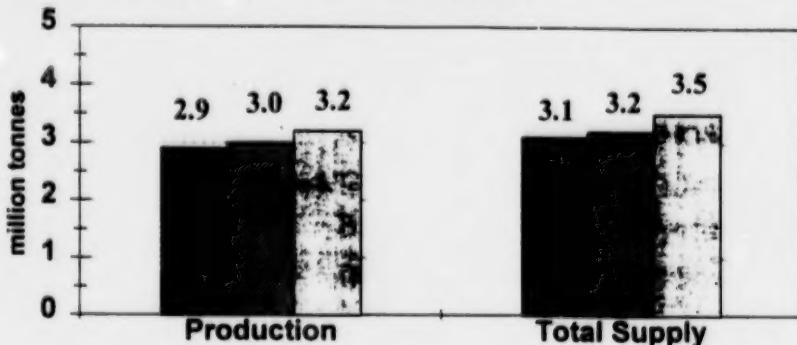
Canadian dry pea exports to the rest of the world are mostly for food use, although market development activity is ongoing to increase feed pea sales, especially to Asia. India and Bangladesh are the most important markets in Asia, followed by China, Pakistan and Malaysia. The most important customer in the western hemisphere is Cuba, followed by Colombia, Peru and the United States.

Canada's main competitors in export markets for dry peas are France, Australia, US and Ukraine.

### **2000-2001**

Exports are forecast to increase slightly to 1.5 Mt, as increased demand is expected to be mostly offset by tighter Canadian supplies.

## WORLD: LENTIL Production and Total Supply



Production FAO, USDA, ABARE, AAFC  
Supply AAFC February 2000 estimate  
f AAFC February 2000 forecast

■ 98-99 ■ 99-00 ■ 00-01f



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### **1999-2000**

World production increased slightly to 3.0 Mt as lower production in the Middle East was more than offset by higher production in Australia and Canada. Total supply also increased slightly, in line with the increased production.

### **2000-2001**

World production is expected to increase by 7%, as production in the Middle East is expected to recover, assuming more normal moisture conditions, and production in Canada is expected to increase further.

Total supply is forecast to increase by 10% due to increased production and higher carry-in stocks.

## **CANADA: LENTILS** **Supply and Disposition**

	<b>98-99</b>	<b>99-00</b>	<b>00-01f</b>
<b>thousand hectares</b>			
<b>Harvested Area</b>	<b>372</b>	<b>497</b>	<b>570</b>
<b>thousand tonnes</b>			
<b>Carry-in Stocks</b>	<b>15</b>	<b>10</b>	<b>95</b>
<b>Production</b>	<b>480</b>	<b>724</b>	<b>765</b>
<b>Domestic Use</b>	<b>120</b>	<b>149</b>	<b>145</b>
<b>Exports</b>	<b>372</b>	<b>495</b>	<b>545</b>

f: AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### **1999-2000**

In Canada, production increased by about 50% to 724,000 t due to higher area and yields. Carry-in stocks were low, therefore total supply also increased by about 50%.

Domestic use and exports are forecast to increase. Carry-out stocks are expected to increase to 95,000 t, with a stocks-use-ratio of 15%.

### **2000-2001**

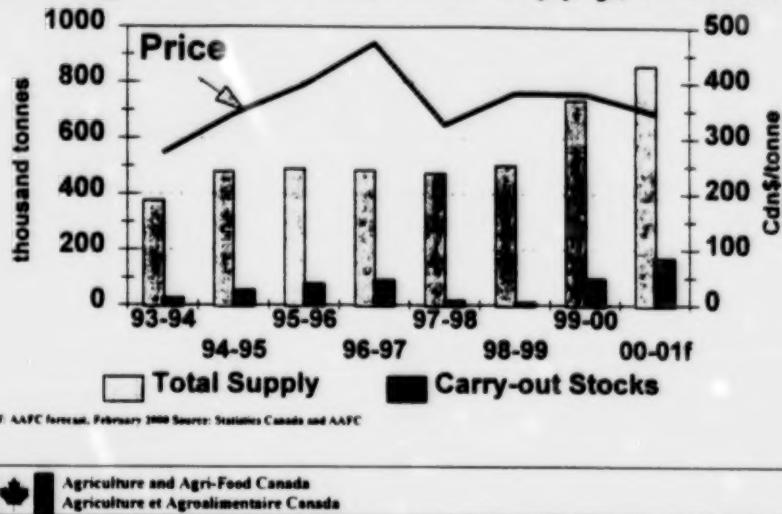
In Canada, area is forecast to increase by 15%. Assuming trend yields, production is forecast to increase by 5% to 765,000 t. Total supply is forecast to increase by 16%, due to increased production and carry-in stocks.

Exports are expected to increase by 10%.

Carry-out stocks are forecast to increase further to 170,000 t, with a stocks-to-use ratio of 25%.

## CANADA: LENTILS

### Average Farm Price, Total Supply, & Stocks



#### 1999-2000

The larger supply and carry-out stocks are expected to be offset by strong demand. Therefore, the average price over all types and grades is forecast to be similar to 1998-1999 at \$365-395/t.

#### 2000-2001

The higher supply and carry-out stocks are expected to pressure prices downward, although this is expected to be partly offset by higher average quality. Therefore, the average price is forecast to fall by 10% to \$325-365/t.

## CANADA: LENTILS Production by Type

98 99 00  
-99 -00 -01f

thousand tonnes

### Green:

Large (Laird, Glamis*)	295	360	360
Medium (Richlea, Vantage*)	55	90	95
Small (Eston, Milestone*)	65	110	160
Red	50	145	125
<b>Dark Green Speckled &amp; Brown</b>	<b>15</b>	<b>19</b>	<b>25</b>

\* Commercial production starting in 2000-2001

f: AAFC forecast, February 2000

Source: Saskatchewan Agriculture and Food and AAFC



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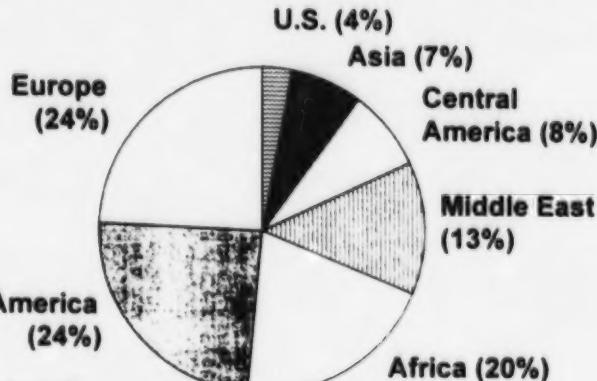
### 1999-2000

Production of the green type increased for all varieties, but the increase was higher for the medium seed size Lairds and for the small seed Estons. The largest increase in production was for the red type, which nearly tripled in production. Increases were smaller for the dark green speckled and brown types.

### 2000-2001

Commercial production of three new varieties will be starting, with the largest potential production for Milestone, based on seed availability. These varieties will supplement the traditional varieties. Production of green lentils is forecast to increase, especially of the small seed size varieties. Production of the red type is forecast to decrease by about 15%, and production of the dark green speckled and brown types is forecast to increase by 30%.

## CANADA: LENTILS 1999-2000f Exports = 495,000 tonnes



f AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### 1999-2000

Canadian lentil exports are expected to increase by 33% to 495,000 t in line with increased production.

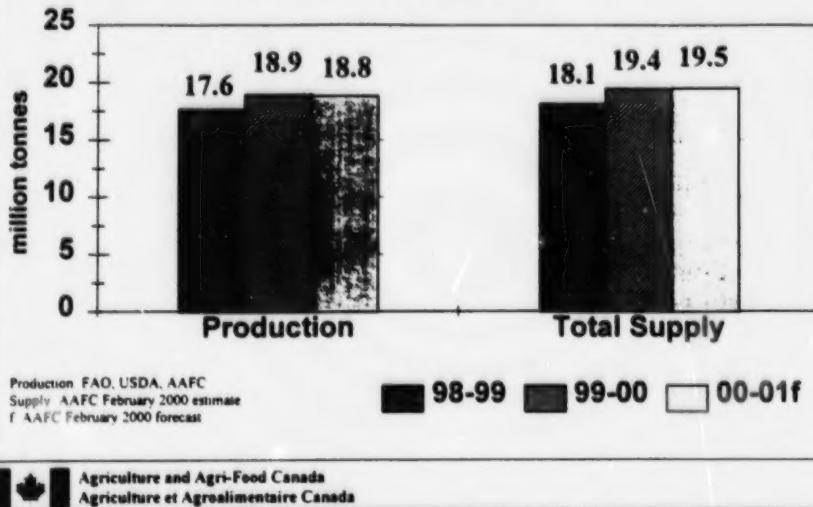
Europe and South America each account for about 25% of Canadian lentil exports. The largest customer in Europe is Spain, followed by Germany, Italy, Belgium and France. In South America, the major customer is Colombia, followed by Venezuela, Ecuador and Chile. About one-third of the exports go to the Middle East and North Africa, with Turkey, Egypt, Morocco and Algeria the most important markets. Exports to India are increasing. An additional important market is Mexico.

The main Canadian competitors in export markets are Turkey, the US and Australia.

### 2000-2001

Exports are forecast to increase by about 10% to 545,000 t due mainly to increased total supply. In addition, Canada will have an advantage over Australia for exports to Muslim countries since the month of Ramadan will be starting around November 30 in 2000 which is too early for exports of new crop lentils from Australia.

## WORLD: DRY BEAN Production and Total Supply



### **1999-2000**

World production increased by 7%, due mainly to increased production in the US, Brazil, India, Myanmar and Canada. Total supply also increased by 7%.

US production increased by 9% to 1.51 Mt, due mainly to higher yields. The largest increase was for white pea beans. The only major decrease was for pintos.

### **2000-2001**

World production is expected to decrease slightly to 18.8 Mt, however total supply is forecast to increase slightly due to higher carry-in stocks.

US production is forecast to decrease by about 15%, due to a decrease in the seeded area and assuming average yields. Production of most types is expected to decrease, with the largest decrease for white pea beans.

## CANADA: DRY BEANS Supply and Disposition

	98-99	99-00	00-01f
thousand hectares			
Harvested Area	96	154	162
thousand tonnes			
Carry-in Stocks	15	25	60
Production	189	294	295
Domestic Use	55	59	65
Exports	193	235	240

f: AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### 1999-2000

In Canada, production increased by 55% to a record 294,000 t in line with the increased area. Total supply increased by 30% as imports are expected to be lower. In 1998-1999, Canadian dealers ran out of some types of beans and therefore imported product from the US to satisfy the market demand. However, imports are expected to decrease substantially in 1999-2000 due to higher Canadian production.

Canadian exports and domestic use are forecast to increase, but the increased supply is expected to result in carry-out stocks increasing to 60,000 t with a stocks-to-use ratio of 20%.

### 2000-2001

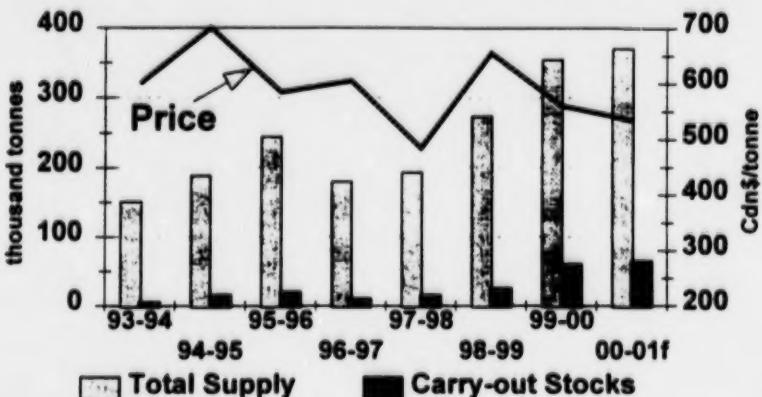
In Canada, production is forecast to remain stable as a 5% increase in the area is offset by lower trend yields.

Total supply is forecast to increase by about 5%, due to higher carry-in stocks.

Total consumption is forecast to increase slightly. Carry-out stocks are expected to rise to 65,000 t, with a stocks-to-use ratio of 22%.

## CANADA: DRY BEANS

### Average Farm Price, Total Supply, & Stocks



f: AAFC forecast, February 2000 Source: Statistics Canada and AAFC



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#### 1999-2000

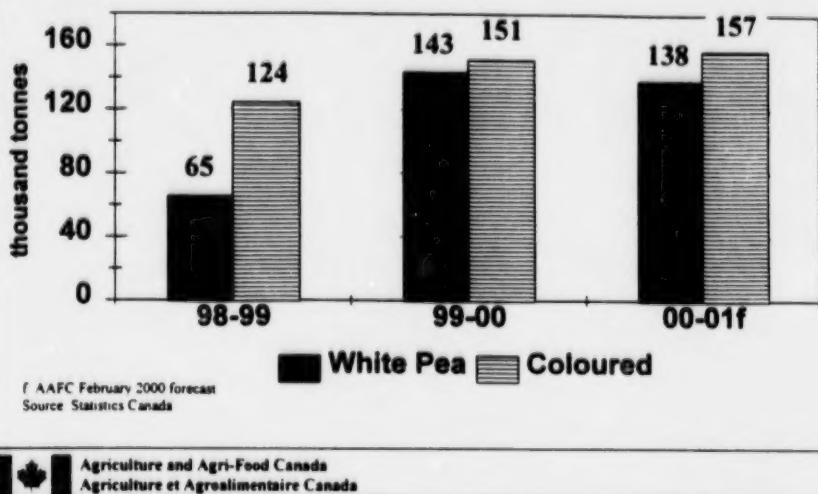
Average price over all types is forecast to fall about 15% to \$530-560/t. Prices of cranberry, great northern and red kidney beans are forecast at above average levels; while prices of white pea, small red and pink beans are forecast at average levels; and prices of pinto, black and brown beans are forecast at below average levels.

#### 2000-2001

Canadian dry bean prices generally follow US prices for the same type of beans adjusted for differences in currency exchange rates and transportation costs.

An expected stronger Canadian dollar and larger world supply will pressure prices downwards. Therefore, the average price is forecast to decrease by about 5% to \$510-550/t.

## CANADA: DRY BEANS Production by Type



### 1999-2000

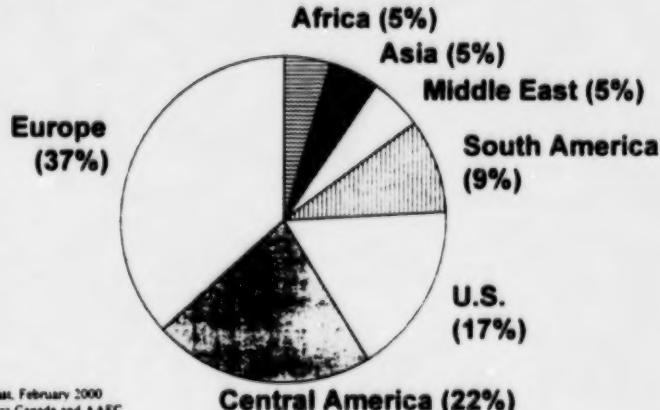
White pea bean production more than doubled, while coloured bean production increased by 22%. Pinto, black, dark and light red kidney, and cranberry are the main coloured beans produced in Canada. Other types produced are small red, great northern and pink, with a small amount of brown, white kidney and azuki.

### 2000-2001

White pea bean production is expected to decline by 3%, while coloured bean production increases by 4%.

## CANADA: DRY BEANS

### 1999-2000f Exports = 235,000 tonnes



f AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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#### 1999-2000

Canadian exports of dry beans are expected to increase by 20% to 235,000 t.

Europe is the main importing region, taking about 35% of exports, with the United Kingdom the main importing country, followed by Italy, Spain and Portugal. UK is the largest export market for Canadian white pea beans.

US is the largest single importer of Canadian coloured beans.

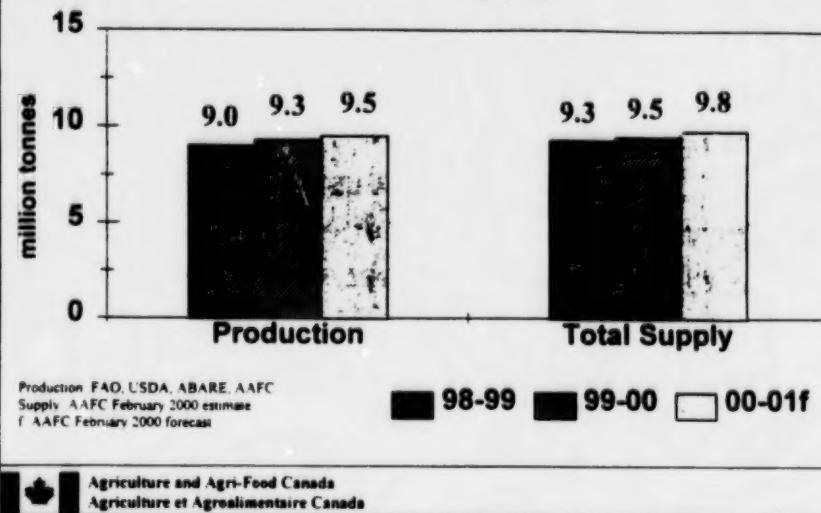
Cuba has become a major importer starting in 1998-1999, as the sugar for dry beans trade with China ended. Other major importers of Canadian dry beans are: Colombia and Algeria.

Major Canadian competitors in export markets are US, Argentina, China, Turkey and Myanmar.

#### 2000-2001

Exports are expected to increase slightly to 240,000 t.

## WORLD: CHICK PEA Production and Total Supply



### 1999-2000

World production increased 3% to 9.3 Mt, due mainly to increased production in India and Canada. Total supply increased by about 2%.

### 2000-2001

World production is forecast to increase to 9.5 Mt, while total supply increases to 9.8 Mt.

## CANADA: CHICK PEAS Supply and Disposition

	98-99	99-00	00-01f
thousand hectares			
<b>Harvested Area</b>	<b>38</b>	<b>139</b>	<b>159</b>
thousand tonnes			
<b>Carry-in Stocks</b>	<b>1</b>	<b>5</b>	<b>20</b>
<b>Production</b>	<b>51</b>	<b>197</b>	<b>215</b>
<b>Domestic Use</b>	<b>35</b>	<b>108</b>	<b>55</b>
<b>Exports</b>	<b>14</b>	<b>75</b>	<b>130</b>

f: AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### 1999-2000

In Canada, production had quadrupled to 197,000 t. Total supply increased by a similar proportion. Average quality of the crop was lower due to disease and frost damage.

There are two types of chick peas produced in Canada, desi and kabuli. The desi type are small and are usually sold split or milled into flour. They are used in stews, soups, pancakes, bread, thickeners and noodles. In the Middle East, consumption is based on a popular dish known as "hommus", produced with mashed chick peas mixed with oil and spices. The kabuli type (also known as garbanzo beans) are larger and sold whole. They are used in salad bars, vegetable mixes or canned. Chick peas can also be eaten raw, parched, fried, roasted, boiled, puffed or sugar-coated.

Exports and domestic use are forecast to increase substantially. The growth in domestic use is mostly due to the use of low quality chick peas for livestock feed. Carry-out stocks are forecast to increase to 20,000 t with a stocks-to-use ratio of 11%.

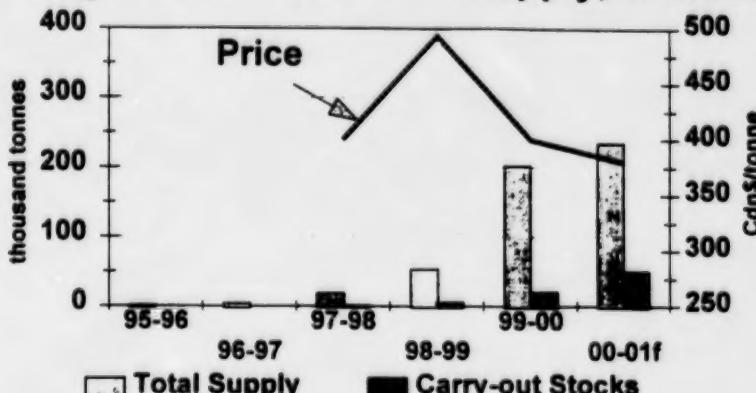
### 2000-2001

Production is forecast to increase to 215,000 t, due to higher area, which is partly offset by lower trend yields. The seeding of the desi types is expected to be confined to the brown soil zone and the seeding of the kabuli type to the warmer and drier areas of the brown soil zone. This should improve the average quality of the crop.

Exports are forecast to increase by 75% due to expected higher quality of the crop and larger supply, but domestic use is forecast to drop due to reduced use for livestock feed. Carry-out stocks are forecast to increase to 50,000 t with a stocks-to-use ratio of 27%.

## CANADA: CHICK PEAS

### Average Farm Price, Total Supply, & Stocks



f: AAFC forecast, February 2000. Source: Statistics Canada and AAFC



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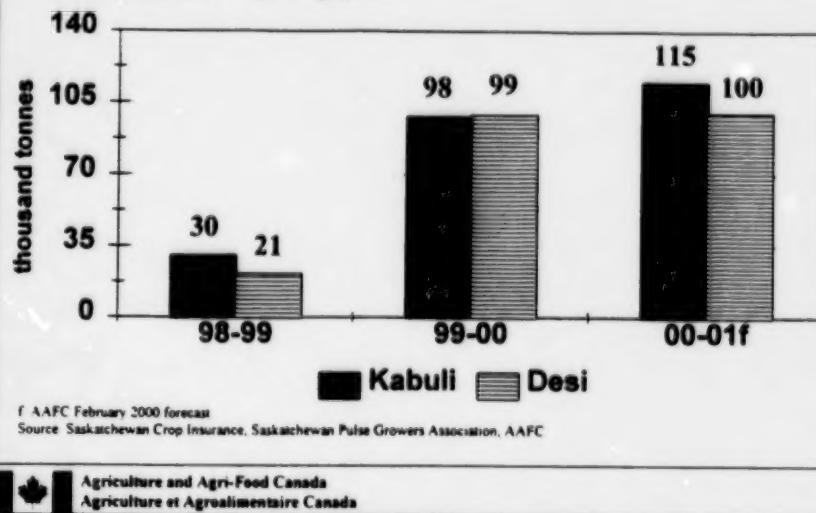
#### 1999-2000

The average price over both types and all sizes and grades is forecast to decrease by about 20% to \$385-415/t, mainly due to lower average quality of the crop and some shift in production to the lower priced desi type.

#### 2000-2001

Higher world supply is expected to pressure prices downwards, however this is expected to be partly offset by improved quality of the crop and some shift in production into the higher priced kabuli type. Therefore, the average price is forecast to decrease by 5% to \$360-400/t.

## CANADA: CHICK PEAS Production by Type



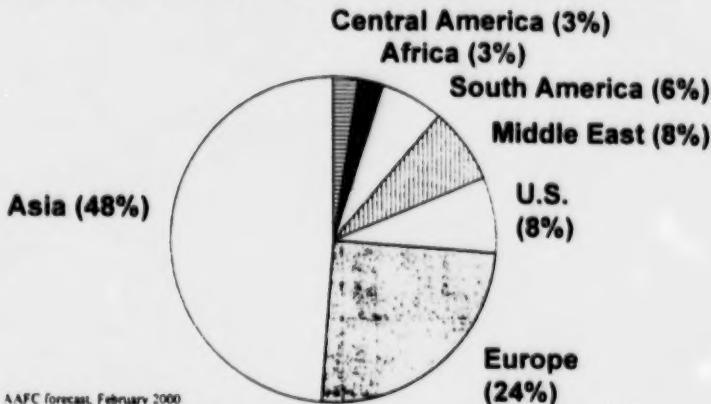
### 1999-2000

Kabuli type production increased by 225% and desi type production increased by 370%.

### 2000-2001

Kabuli type production is forecast to increase by 17%, while desi type production is expected to remain stable.

## CANADA: CHICK PEAS 1999-2000f Exports = 75,000 tonnes



f AAFC Forecast, February 2000  
Source: Statistics Canada and AAFC

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### 1999-2000

Exports are forecast to increase by more than 400% in line with the increased production.

The desi type are exported mainly to Asia, especially India and Bangladesh.

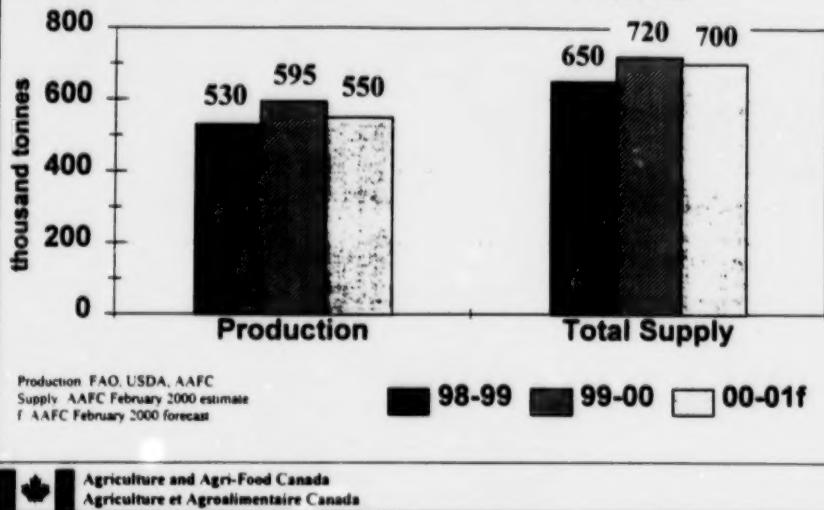
The kabuli type are exported mainly to Europe, the Americas and the Middle East. Major individual importing countries are the US, Colombia, France, Spain and the United Arab Emirates.

The only significant exporters of chick peas are Turkey, Australia and Mexico.

### 2000-2001

Exports are expected to increase by about 75% due to expected higher quality of the crop and larger supply. Most of the growth in exports is expected to be for the kabuli type.

## WORLD: MUSTARD SEED Partial Production and Total Supply



### 1999-2000

Complete data on world mustard seed production is not available. Partial data indicates production at about 595,000 t, up 12% from the previous year. Total supply increased by 11%. However, data from several important mustard seed producing countries such as India, Pakistan and Bangladesh is not available because in those countries mustard seed production data is combined with rapeseed.

### 2000-2001

World production, based on partial data is forecast to decrease by 7%, however total supply is forecast to decrease by only 3%.

## CANADA: MUSTARD SEED Supply and Disposition

	98-99	99-00	00-01f
thousand hectares			
<b>Harvested Area</b>	<b>279</b>	<b>273</b>	<b>258</b>
thousand tonnes			
<b>Carry-in Stocks</b>	<b>75</b>	<b>95</b>	<b>150</b>
<b>Production</b>	<b>239</b>	<b>306</b>	<b>250</b>
<b>Domestic Use</b>	<b>61</b>	<b>67</b>	<b>65</b>
<b>Exports</b>	<b>159</b>	<b>185</b>	<b>195</b>

f: AAFC forecast, February 2000

Source: Statistics Canada and AAFC



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### 1999-2000

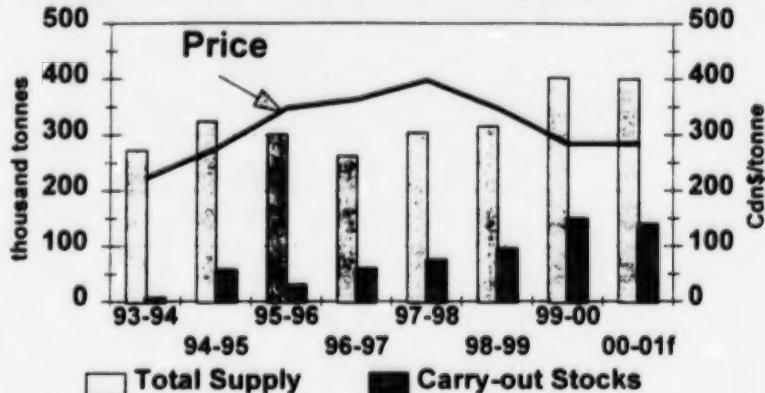
Canadian production increased by about 30% to 306,000 t, as the slightly lower area was more than offset by much higher yields. Total supply increased by 28% to 402,000 t. Most of the carry-in stocks were the yellow type.

Exports are forecast to be higher, due to strong demand in south Asia and the US, and domestic use is expected to increase slightly. Carry-out stocks are expected to increase to a burdensome level of 150,000 t, with a stocks-to-use ratio of 60%.

### 2000-2001

Production is forecast to decrease by 18% to 250,000 t due to a 5% decrease in area and lower trend yields. Exports are forecast to increase by 5% while domestic use remains stable. Carry-out stocks are expected to decrease to 140,000 t, with a slightly lower stocks-to-use ratio of 54%.

## CANADA: MUSTARD SEED Average Farm Price, Total Supply, & Stocks



© AAFC forecast, February 2000. Source: Statistics Canada and AAFC



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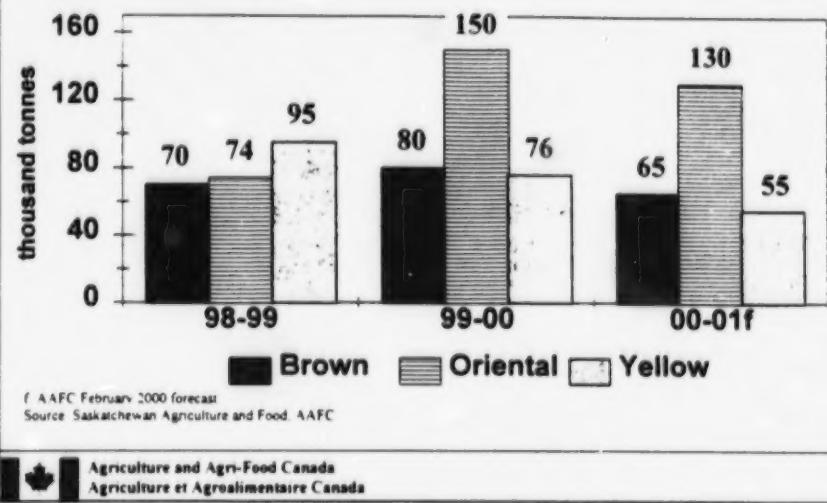
### **1999-2000**

The average price over all types and grades is expected to fall by nearly 20% to \$270-300/t due to increased supply and carry-out stocks. The price of oriental mustard is also being pressured downward by lower prices of other oilseed crops.

### **2000-2001**

The large supply is expected to continue pressuring prices, therefore the average price is forecast to remain stable at \$265-305/t.

## CANADA: MUSTARD SEED Production by Type



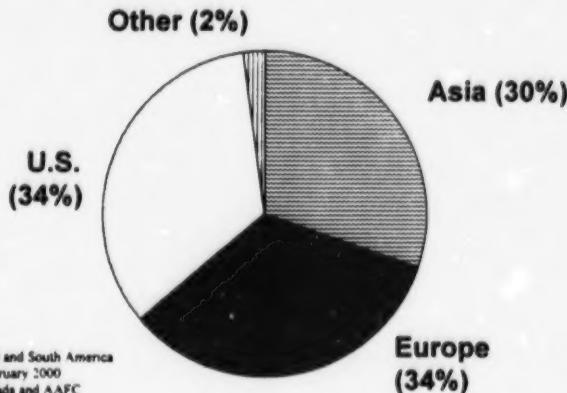
### 1999-2000

Brown mustard production increased 15%, while yellow mustard production decreased by 20%. The production of oriental mustard doubled.

### 2000-2001

Production of brown, oriental and yellow mustard is forecast to decrease by 19%, 13% and 28% respectively.

## CANADA: MUSTARD SEED 1999-2000<sup>f</sup> Exports = 185,000 tonnes



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### 1999-2000

Canadian mustard seed exports are forecast to increase 15% to 185,000 t. Canada is the only major exporter of mustard seed in the world, accounting for about 80% of world exports.

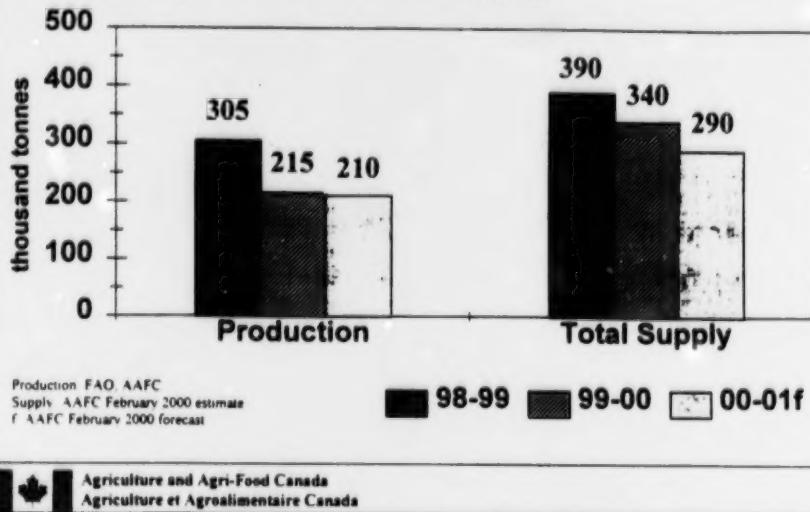
Canadian mustard seed exports are mainly to the US, Europe and Asia. Major individual importing countries, in addition to the US, are Belgium, France, Germany, Netherlands, UK, Bangladesh, India and Japan.

Brown mustard is exported mainly to Europe, oriental mustard is exported mainly to Asia and yellow mustard is mainly used in Canada or exported to the US.

### 2000-2001

Exports are forecast to increase by 5% to 195,000 t.

## WORLD: CANARY SEED Production and Total Supply



### 1999-2000

World canary seed production decreased by 30%, however total supply decreased by only 13% because of higher carry-in stocks. Canada is the dominant producer of canary seed in the world, with nearly 80% of world production. The only other significant producers are Argentina and Hungary.

### 2000-2001

World production is expected to decrease slightly, however total supply is forecast to decrease by 15% due to lower carry-in stocks.

## CANADA: CANARY SEED Supply and Disposition

	98-99	99-00	00-01f
thousand hectares			
<b>Harvested Area</b>	<b>208</b>	<b>146</b>	<b>138</b>
thousand tonnes			
<b>Carry-in Stocks</b>	<b>73</b>	<b>120</b>	<b>90</b>
<b>Production</b>	<b>235</b>	<b>166</b>	<b>155</b>
<b>Domestic Use</b>	<b>51</b>	<b>46</b>	<b>45</b>
<b>Exports</b>	<b>137</b>	<b>150</b>	<b>150</b>

f: AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### 1999-2000

Canadian canary seed production decreased by 30%, but total supply decreased by only 7% to 286,000 t due to higher carry-in stocks. The proportion of Canario, a hairless or glabrous canary seed, in total canary seed production is gradually increasing. Canario does not have the tiny hairs at the base of the seed that break off and cause severe itching to producers, processors and packagers. Canario also helps the industry through reduced shipping cost due to 12% greater seed packing per container and the elimination of the oiling and polishing steps in processing.

Exports are forecast to increase by about 10%.

Carry-out stocks are expected to decrease to 90,000 t, but remain burdensome, with a stocks-to-use ratio of 46%.

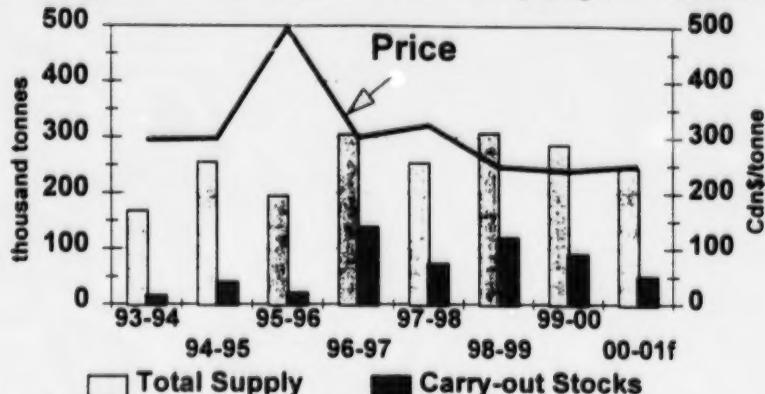
### 2000-2001

Production is forecast to decrease in line with a 5% decrease in area and total supply is expected to decrease by 15% to 245,000 t, due to lower carry-in stocks.

Exports and domestic use are expected to remain stable.

Carry-out stocks are forecast to decrease to 50,000 t, with a stocks-to-use ratio of 26%.

## CANADA: CANARY SEED Average Farm Price, Total Supply, & Stocks



f. AAFC forecast, February 2000. Source: Statistics Canada and AAFC



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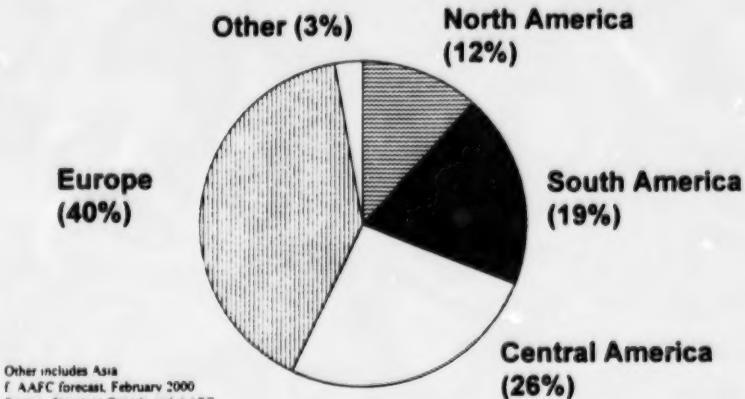
### 1999-2000

Average price of canary seed is forecast to decrease slightly to \$230-250/t.

### 2000-2001

Lower total supply and carry-out stocks are forecast to support prices about 5% higher at \$235-265.

## **CANADA: CANARY SEED 1999-2000f Exports = 150,000 tonnes**



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### **1999-2000**

Canadian canary seed exports are expected to increase by 10% to 150,000 t.

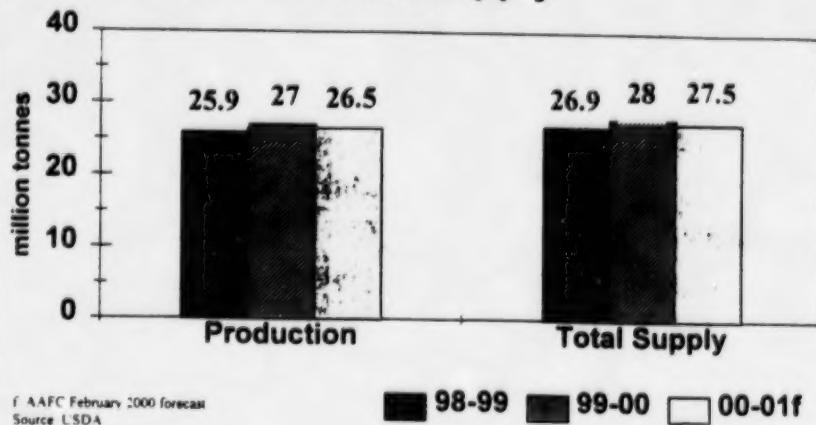
Canadian exports are mainly to the Americas and Europe. The main individual importing countries are Belgium, Netherlands, Brazil, Mexico, and the US.

Canada is by far the largest canary seed exporter in the world, accounting for more than 80% of world exports. Other important exporters are Argentina and Hungary.

### **2000-2001**

Exports are expected to remain stable at 150,000 t.

## WORLD: SUNFLOWER SEED Production and Total Supply



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### 1999-2000

World production increased by 4% to 26.99 Mt. Total supply increased by a similar proportion to 28.17 Mt. About 95% of world production is crushed for oil.

### 2000-2001

World production is forecast to decrease slightly to 26.5 Mt, while total supply declines by 2% to 27.47 Mt due to lower carry-in stocks. Although total production is expected to decrease, some growth in confectionary sunflower production is expected due to strong demand.

## CANADA: SUNFLOWER SEED Supply and Disposition

	98-99	99-00	00-01f
<b>thousand hectares</b>			
<b>Harvested Area</b>	<b>69</b>	<b>79</b>	<b>86</b>
<b>thousand tonnes</b>			
<b>Carry-in Stocks</b>	<b>10</b>	<b>35</b>	<b>35</b>
<b>Production</b>	<b>112</b>	<b>122</b>	<b>125</b>
<b>Domestic Use</b>	<b>61</b>	<b>72</b>	<b>80</b>
<b>Exports</b>	<b>43</b>	<b>60</b>	<b>60</b>

f: AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### 1999-2000

In Canada, production increased by 10% to 122,000 t. Total supply increased by 15% to 167,000 t because of higher carry-in stocks.

Domestic use are expected to increase with the growth in supply and the processing industry.

Canadian sunflower exports are forecast to increase to 60,000 t with most of them going to the US and the remainder mainly to Europe.

About 40% of Canadian production is used for bird seed, 40% for confectionary use and 20% is crushed for oil in the US.

Carry-out stocks are forecast to remain stable at 35,000 t, with a stocks-to-use ratio of 27%.

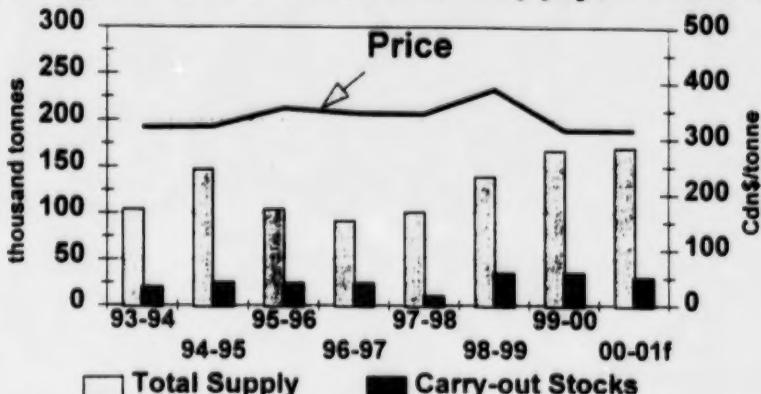
### 2000-2001

Production is forecast to increase marginally to 125,000 t due to a 5% increase in the area, which is partly offset by lower trend yields. Total supply is forecast to grow by 5% to 170,000 t.

Exports are expected to be stable, but domestic use is forecast to increase.

Carry-out stocks are forecast to decrease, with a stocks-to-use ratio of 21%.

## CANADA: SUNFLOWER SEED Average Farm Price, Total Supply, & Stocks



f: AAFC forecast, February 2000. Source: Statistics Canada and AAFC



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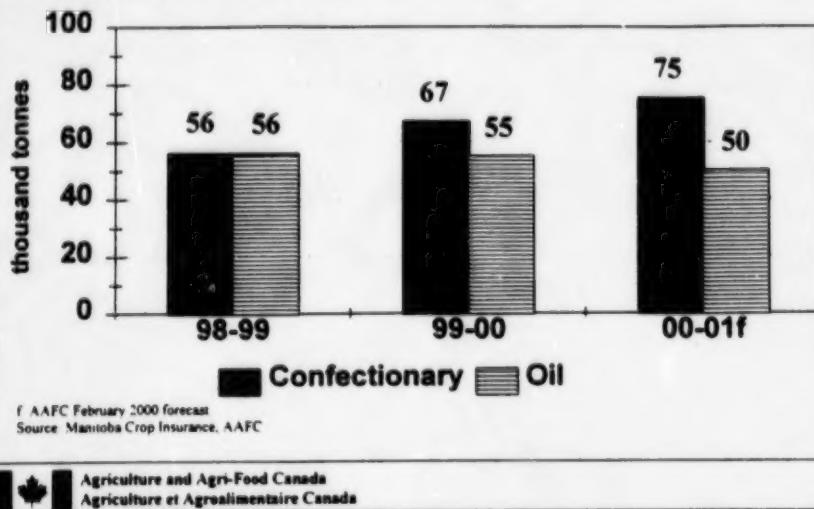
### 1999-2000

The larger world supply has pressure prices downward, therefore the average price over both types is forecast to decline by 20% to \$300-330/t.

### 2000-2001

The average price is forecast to remain stable at \$295-335/t.

## CANADA: SUNFLOWER SEED Production by Type



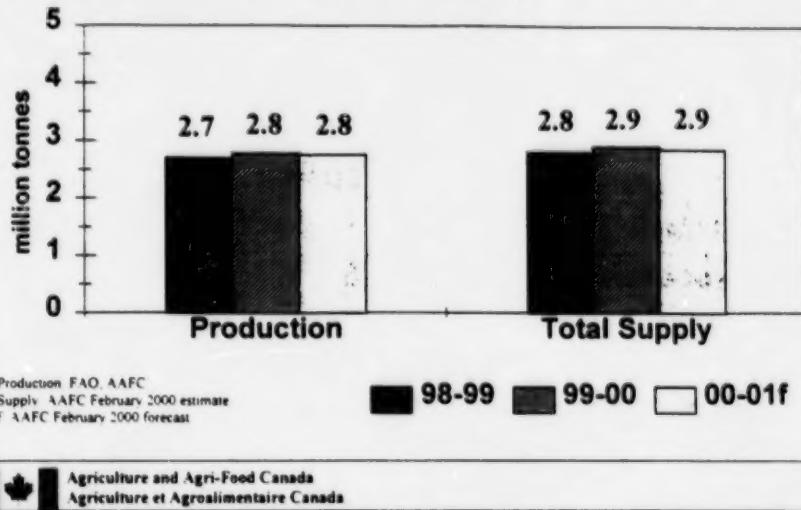
### **1999-2000**

Confectionary sunflower seed production increased by 20%, while oilseed sunflower production decreased slightly.

### **2000-2001**

Confectionary sunflower seed production is forecast to increase by 12%, however oilseed sunflower production is expected to decrease by 10%. Some of the oilseed production is expected to be from the new NuSun hybrids.

## WORLD: BUCKWHEAT Production and Total Supply



### 1999-2000

World buckwheat production increased by 3%, while total supply increased by 3%.

### 2000-2001

World production and total supply are forecast to be similar to 1999-2000.

## **CANADA: BUCKWHEAT Supply and Disposition**

	<b>98-99</b>	<b>99-00</b>	<b>00-01f</b>
	<b>thousand hectares</b>		
<b>Harvested Area</b>	<b>14</b>	<b>13</b>	<b>14</b>
	<b>thousand tonnes</b>		
<b>Carry-in Stocks</b>	<b>1</b>	<b>1</b>	<b>1</b>
<b>Production</b>	<b>15</b>	<b>13</b>	<b>16</b>
<b>Domestic Use</b>	<b>9</b>	<b>8</b>	<b>8</b>
<b>Exports</b>	<b>9</b>	<b>8</b>	<b>9</b>

f: AAFC forecast, February 2000  
Source: Statistics Canada and AAFC



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### **1999-2000**

Canadian buckwheat production decreased by 20% to 13,000 t due to lower harvested area and yields.

Canadian domestic consumption and exports are forecast to decrease due to lower supply.

Canadian exports are mainly to Japan, with the balance going mostly to the US, Netherlands and Belgium. Main Canadian competitors in the export markets are China, Ukraine, Russia and US.

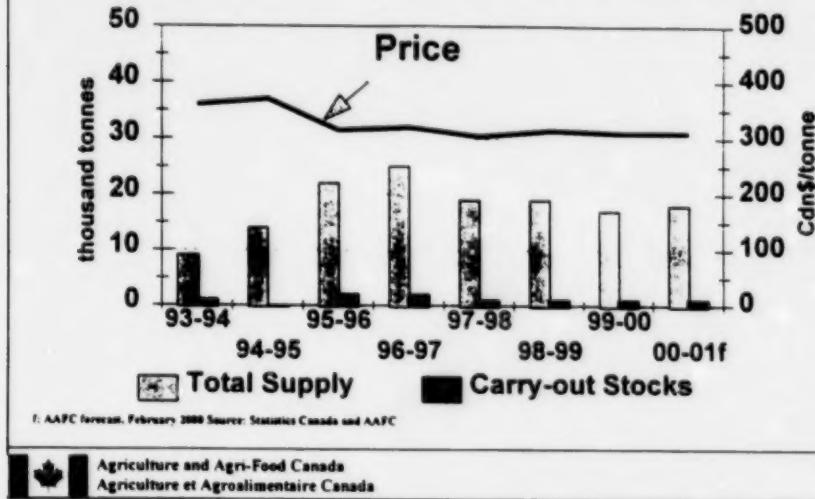
### **2000-2001**

Production is forecast to increase to 16,000 t because of higher seeded area and trend yields.

Domestic use is forecast to remain flat, while exports are forecast to increase.

**In the longer term**, Canadian buckwheat production is expected to increase substantially in about three years, when self-pollinating and frost tolerant varieties are available. This will result in higher yields and reduced production risk.

## CANADA: BUCKWHEAT Average Farm Price, Total Supply, & Stocks



### 1999-2000

The average price is expected to decrease slightly to \$300-320/t due to higher world production.

### 2000-2001

The average price is forecast to remain similar to 1999-2000 at \$295-325/t.

## CANADA: SUMMARY OUTLOOK FOR 2000-2001

### ALL SPECIAL CROPS

- area 10% higher
- lower yields
- production slightly lower
- total supply slightly higher
- exports about 5% higher
- domestic use stable
- carry-out stocks down 10%

### AVERAGE PRICES

Higher: dry peas up 5-10%, canary seed up 5%

Stable: mustard seed, sunflower seed,  
buckwheat

Lower: lentils down 10%, dry beans down 5%,  
chick peas down 5%

### DRY PEAS

- area 15% higher
- lower yields
- production slightly lower
- total supply slightly lower
- exports and domestic use higher
- carry-out stocks down 45%

### LENTILS

- area 15% higher
- lower yields
- production 5% higher
- total supply 15% higher
- exports up about 10%, domestic use stable
- carry-out stocks higher

### DRY BEANS

- area up 5%
- lower yields
- production stable
- total supply up 5%
- exports and domestic use slightly higher
- carry-out stocks slightly higher

### CHICK PEAS

- area 15% higher
- lower yields
- higher average quality
- production up about 10%
- exports 75% higher
- domestic use down due to lower expected  
use for livestock feed
- carry-out stocks higher

### MUSTARD SEED

- area 5% lower
- lower yields
- production down nearly 20%
- total supply stable
- exports up 5%, but domestic use stable
- carry-out stocks down 5%

### CANARY SEED

- area down 5%
- yields slightly lower
- production down 7%
- total supply down 15%
- exports and domestic use stable
- carry-out stocks down 45%

### SUNFLOWER SEED

- area 9% higher
- lower yields
- production and total supply slightly higher
- exports stable, but domestic use higher
- carry-out stocks slightly lower

### BUCKWHEAT

- area 7% higher
- higher yields
- production 23% higher
- total supply 5% higher
- exports higher, but domestic use stable
- carry-out stocks stable

## CANADA: SUPPLY AND DISPOSITION FOR SPECIAL CROPS (c)

FEBRUARY 17, 2000

Grain and Crop Year (a)	Harvested Area 000 ha	Yield t/ha	Production	Imports (b)	Total Supply thousand metric tonnes	Exports (b)	Total Domestic Use (d)	Ending Stocks	Average Price (e) \$/t
<b>Dry Peas</b>									
1996-1997	520	2.25	1,169	8	1,397	855	462	80	209
1997-1998	848	2.06	1,747	12	1,839	1,116	573	150	177
1998-1999	1,078	2.17	2,337	10	2,497	1,536	681	280	132
1999-2000f	835	2.70	2,252	10	2,542	1,450	772	320	120-140
2000-2001f	956	2.27	2,170	10	2,500	1,500	820	180	125-155
<b>Lentils</b>									
1996-1997	304	1.33	403	4	484	286	108	90	470
1997-1998	329	1.15	379	4	473	349	109	15	324
1998-1999	372	1.29	480	7	502	372	120	10	381
1999-2000f	497	1.46	724	5	739	495	149	95	365-395
2000-2001f	570	1.34	765	0	860	545	145	170	325-365
<b>Dry Beans</b>									
1996-1997	84	1.58	133	26	179	124	45	10	605
1997-1998	90	1.82	163	20	193	127	51	15	485
1998-1999	96	1.98	189	69	273	193	55	25	655
1999-2000f	154	1.91	294	35	354	235	59	60	530-560
2000-2001f	162	1.82	295	15	370	240	65	65	510-550
<b>Chick Peas</b>									
1996-1997	3	1.33	4	4	8	1	7	0	n/a
1997-1998	11	1.36	15	3	18	3	14	1	400
1998-1999	38	1.34	51	2	54	14	35	5	493
1999-2000f	139	1.42	197	1	203	75	108	20	385-415
2000-2001f	159	1.35	215	0	235	130	55	50	360-400
<b>Mustard Seed</b>									
1996-1997	233	0.99	231	1	262	141	61	60	363
1997-1998	292	0.83	243	1	304	166	63	75	398
1998-1999	279	0.86	239	1	315	159	61	95	348
1999-2000f	273	1.12	306	1	402	185	67	150	270-300
2000-2001f	258	0.97	250	0	400	195	65	140	265-305
<b>Canary Seed</b>									
1996-1997	235	1.21	285	0	305	122	44	139	300
1997-1998	113	1.01	115	0	254	134	47	73	322
1998-1999	208	1.13	235	0	308	137	51	120	248
1999-2000f	146	1.14	166	0	286	150	46	90	230-250
2000-2001f	138	1.12	155	0	245	150	45	50	235-265
<b>Sunflower Seed</b>									
1996-1997	35	1.57	55	12	91	24	43	24	345
1997-1998	51	1.29	65	12	101	45	46	10	344
1998-1999	69	1.62	112	17	139	43	61	35	388
1999-2000f	79	1.54	122	10	167	60	72	35	300-330
2000-2001f	86	1.45	125	10	170	60	80	30	295-335
<b>Buckwheat</b>									
1996-1997	17	1.30	22	1	25	11	12	2	320
1997-1998	14	1.14	16	1	19	9	9	1	305
1998-1999	14	1.07	15	3	19	9	9	1	315
1999-2000f	13	1.00	13	3	17	8	8	1	300-320
2000-2001f	14	1.14	16	1	18	9	8	1	295-325
<b>Total Special Crops (c)</b>									
1996-1997	1,431	1.61	2,302	56	2,751	1,564	782	405	
1997-1998	1,748	1.57	2,743	53	3,201	1,949	912	340	
1998-1999	2,154	1.70	3,658	109	4,107	2,463	1,073	571	
1999-2000f	2,136	1.91	4,074	65	4,710	2,658	1,281	771	
2000-2001f	2,343	1.70	3,991	36	4,798	2,829	1,283	686	

(a) Aug-July crop year

(b) Excludes products

(c) Includes dry peas, lentils, dry beans, chick peas, mustard seed, canary seed sunflower seed and buckwheat

(d) Includes food, feed, seed, waste and dockage

(e) Producer price, FOB plant. Average over all types, grades and markets

Source Statistics Canada and industry consultations

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**AGRICULTURE AND AGRI-FOOD CANADA (AAFC)**  
**Policy Branch - Market Analysis Division - Winnipeg, Manitoba**  
**CANADIAN GRAINS AND OILSEEDS OUTLOOK February 17, 2000**

For 2000-01, world wheat prices (excluding durum) are expected to strengthen slightly from the extremely low 1999-00 level, due to lower US production and tightening world supplies. Coarse grain prices are expected to be similar to 1999-00, due to continued high corn supplies in the US and barley supplies in the EU. Oilseed prices are expected to decrease from current low levels due to burdensome world oilseed supplies, especially US soybeans, and lower edible oil prices. The major factors to watch are: growing conditions in the major importing and exporting regions; US Loan Deficiency Payments; EU export subsidies; import demand from China and the Canada/US exchange rate.

Area seeded in western Canada is forecast to shift out of oilseeds into durum, barley, spring wheat and special crops due to higher expected net returns. Assuming that, in general, yields decrease from the record highs of 1999-00, total production of grains and oilseeds in Canada is forecast by AAFC to decrease to 62.9 million tonnes (Mt), from 66.2 Mt in 1999-00. Supplies, however, are not expected to decrease to the same extent due to higher carry-in stocks. Total exports are projected to decrease by about 1 Mt, as lower wheat and corn exports more than offset higher barley, oat and flaxseed exports.

#### **WHEAT (ex-durum)**

For 1999-00, exports are expected to increase by 37%, but remain well below the 10-year average of 16 Mt. Carry-out stocks are projected to rise by about 10%.

For 2000-01, Canadian production is forecast by AAFC to decline by 8%, with lower yields offsetting a higher seeded area. With lower supplies, exports are projected to fall by 5%. Carry-out stocks are projected to decline by about 8%. The Canadian Wheat Board (CWB) final price for No. 1 CWRS is forecast by AAFC at \$155-185/t I/S VC/SL, marginally higher than the January Pool Return Outlook (PRO) for 1999-00. However, protein premiums are expected to decline. Ontario wheat production is forecast at 1.3 Mt, 13% below 1999-00 as a result of lower yields. AAFC forecasts the final price for No. 1 CEWW wheat (Pool A) at \$110-120/t, terminal or processor location, \$5/t above 1999-00.

#### **DURUM**

For 1999-00, durum exports are expected to remain strong, but decline slightly, due to low supplies of high quality durum. Carry-out stocks are expected to fall sharply, due to high exports and lower production.

For 2000-01, production is forecast to increase by 26%, to 5.4 Mt, second only to the record 6.0 Mt produced in 1998-99. Supplies are expected to rise by only 9%, due to lower carry-in stocks. Exports, however, are forecast to be unchanged, due to larger crops in the EU and North Africa and increased competition from the US. Carry-out stocks are projected to rise close to the

1998-99 level. The CWB final price for No. 1 CWAD is forecast by AAFC at \$165-195/t, vs the 1999-00 CWB PRO of \$190-220/t. The premium for durum wheat over spring wheat is forecast at \$10/t, vs \$38/t for 1999-00.

#### **BARLEY**

For 1999-00, feed barley exports are expected to remain low, due to stronger returns from the domestic feed market than the export market. Malting barley exports are forecast to rise due to increased demand from the US and China. Carry-out stocks are expected to increase slightly.

For 2000-01, production and supply are forecast to increase slightly. Feed barley exports are forecast to remain low while malting barley exports continue strong. Domestic feed demand is expected to strengthen due to higher livestock numbers. Carry-out stocks are expected to increase. Off-Board feed barley prices are forecast to remain unchanged from 1999-00. The final CWB price for No. 1 CW feed barley is forecast by AAFC at \$115-145/t, the same as 1999-00. Malting barley prices are expected to decrease because of increased supplies in the US, Canada and Australia. The CWB final price for Special Select (SS) 2-Row Designated Barley is forecast to fall by about \$15/t from 1999-00, with the SS 6-Row price expected to fall by \$25/t.

#### **OATS**

For 1999-00, oat exports are expected to decline due to continued competition from Scandinavian oats in the US feed market, while oat product exports remain strong. Carry-out stocks are forecast to remain high due to large supplies.

For 2000-01, supplies are forecast to decrease slightly due to lower production. Total exports to the US are expected to increase slightly, as import demand from the US is forecast to continue its upward trend. The price is expected to remain unchanged from 1999-00.

#### **CORN**

For 1999-00, despite record production, imports of US corn are expected to rise due to increased industrial use. Exports are forecast to fall. Carry-out stocks are expected to increase to 0.98 Mt.

For 2000-01, production is forecast to fall by 8% due to lower yields. To offset lower domestic supplies, imports are expected to rise and exports to fall. Feed and industrial use of corn are forecast to remain unchanged from 1999-00. Carry-out stocks are forecast to fall. The Chatham corn price is expected to be similar to 1999-00, with Ontario corn priced more on an import basis than in 1999-00.

#### **CANOLA**

For 1999-00, exports are expected to increase due to the strong pace of Chinese imports. Domestic crush is expected to fall slightly, despite favourable crush margins, due to weak markets for edible oil. However, carry-out stocks are expected to rise sharply due to record production.

For 2000-01, production is forecast to fall by 20% due to a decrease in seeded area and lower yields. However, supplies are forecast to decline by only 5%, due to large carry-in stocks. Exports are forecast to remain unchanged, while domestic crush is forecast to rise. Carry-out stocks are expected to fall, but remain burdensome. Prices are projected to drop by a further 5% due to lower US soybean prices and increased world edible oil supplies.

#### **FLAXSEED (excluding solin)**

For 1999-00, exports to the EU and the US are expected to decline sharply. Carry-out stocks are forecast to increase significantly to a burdensome level.

For 2000-01, production is forecast to decline sharply due to lower seeded area and reduced yields. Exports are forecast to rise by about 33% due to increased demand from the EU and US. Despite projected lower carry-out stocks, prices are forecast to continue to decline by about 5% from the lows of 1999-00 due to increased supplies.

#### **SOYBEANS**

For 1999-00, imports are projected to rise by 10%. Due to projected higher exports and domestic crush, carry-out stocks are expected to remain steady.

For 2000-01, production is forecast to fall but exports and domestic crush are expected to remain firm at historically high levels. Prices are forecast to decline by almost 10% from the lows of 1999-00 due to projected record high soybean production in the US.

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**CANADA: SUPPLY AND DISPOSITION FOR GRAINS AND OILSEEDS**
**FEBRUARY 17, 2000**

Grain and Crop Year (a)	Harvested Area 000 ha	Yield t/ha	Production	Imports (b)	Total Supply	Exports (c)	Food and Ind. Use	Feed, Waste & Dockage	Total Domestic Use (d)	Ending Stocks	Average Price (e) \$/t
<b>Durum</b>											
1998-1999	2,914	2.07	6,042	3	6,802	3,848	182	650	1,001	1,952	201
1999-2000f	1,760	2.42	4,259	10	6,221	3,800	180	611	1,021	1,400	190-220*
2000-2001f	2,405	2.23	5,370	1	6,771	3,800	185	656	1,071	1,900	165-195
<b>Wheat Except Durum</b>											
1998-1999	7,764	2.32	18,034	77	23,363	10,783	2,691	3,549	7,078	5,413	184
1999-2000f	8,603	2.63	22,591	15	28,019	14,800	2,675	3,679	7,219	6,000	157-177*
2000-2001f	8,770	2.37	20,770	25	26,795	14,100	2,700	3,605	7,195	5,500	155-185
<b>All Wheat</b>											
1998-1999	10,678	2.25	24,076	80	30,165	14,631	2,873	4,199	8,079	7,365	
1999-2000f	10,364	2.59	26,850	25	34,240	18,600	2,855	4,290	8,240	7,400	
2000-2001f	11,175	2.34	26,140	26	33,566	17,900	2,885	4,261	8,266	7,400	
<b>Barley</b>											
1998-1999	4,272	2.98	12,709	62	15,230	1,695	375	10,088	10,848	2,687	117
1999-2000f	4,069	3.24	13,196	25	15,908	2,400	385	9,918	10,708	2,800	100-120
2000-2001f	4,275	3.15	13,480	25	16,305	2,500	385	10,015	10,805	3,000	95-125
<b>Corn</b>											
1998-1999	1,118	8.01	8,952	893	10,737	830	1,845	7,147	9,023	885	110
1999-2000f	1,141	7.97	9,096	1,000	10,981	700	2,000	7,276	9,306	975	95-115
2000-2001f	1,135	7.34	8,330	1,100	10,405	300	2,000	7,275	9,305	800	90-120
<b>Oats</b>											
1998-1999	1,592	2.49	3,958	3	4,807	1,491	226	1,833	2,224	1,092	132
1999-2000f	1,398	2.60	3,641	3	4,736	1,350	220	1,906	2,286	1,100	110-130
2000-2001f	1,399	2.55	3,573	3	4,676	1,400	225	1,891	2,276	1,000	105-135
<b>Rye</b>											
1998-1999	204	1.96	398	0	462	80	57	140	217	164	
1999-2000f	169	2.29	387	0	551	85	58	200	276	190	
2000-2001f	139	2.18	302	0	492	80	60	162	242	170	
<b>Mixed Grains</b>											
1998-1999	198	2.77	548	0	548	0	0	548	548	0	
1999-2000f	153	2.92	447	0	447	0	0	447	447	0	
2000-2001f	180	2.79	503	0	503	0	0	503	503	0	
<b>Total Coarse Grains</b>											
1998-1999	7,384	3.60	26,565	958	31,783	4,096	2,503	19,756	22,859	4,828	
1999-2000f	6,930	3.86	26,767	1,028	32,623	4,535	2,663	19,747	23,023	5,065	
2000-2001f	7,128	3.67	26,188	1,128	32,381	4,280	2,670	19,846	23,131	4,970	
<b>Canola</b>											
1998-1999	5,421	1.41	7,643	157	8,163	3,900	3,063	542	3,649	614	373
1999-2000f	5,564	1.58	8,798	150	9,562	4,100	3,000	645	3,687	1,775	275-315
2000-2001f	4,950	1.45	7,200	150	9,125	4,100	3,200	585	3,825	1,200	265-305
<b>Flaxseed</b>											
1998-1999	874	1.24	1,081	5	1,127	719	n/a	n/a	246	162	313
1999-2000f	793	1.32	1,049	4	1,215	450	n/a	n/a	175	590	220-260
2000-2001f	485	1.37	665	5	1,260	600	n/a	n/a	185	475	210-250
<b>Soybeans</b>											
1998-1999	980	2.79	2,737	254	3,179	868	1,576	396	2,064	247	266
1999-2000f	999	2.77	2,766	400	3,413	900	1,800	397	2,263	250	225-265
2000-2001f	994	2.69	2,673	450	3,373	900	1,805	400	2,273	200	205-245
<b>Total Oilseeds</b>											
1998-1999	7,275	1.58	11,461	417	12,469	5,487	4,639	938	5,959	1,023	
1999-2000f	7,357	1.71	12,613	554	14,190	5,450	4,800	1,042	6,125	2,615	
2000-2001f	6,429	1.64	10,538	605	13,758	5,600	5,005	985	6,283	1,875	
<b>Total Grains And Oilseeds</b>											
1998-1999	25,336	2.45	62,102	1,455	74,417	24,214	10,015	24,892	36,897	13,217	
1999-2000f	24,650	2.69	66,231	1,607	81,054	28,585	10,318	25,079	37,389	15,080	
2000-2001f	24,732	2.54	62,866	1,759	79,705	27,780	10,560	24,092	37,680	14,245	

(a) Aug.-July crop year except corn and soybeans which are Sept. - Aug.

(b) Excludes imports of products.

(c) Includes exports of products for wheat, oats, barley, and rye. Excludes exports of oilseed products.

(d) Includes seed use.

(e) Crop year average prices: No. 1 CWRS and No. 1 CWAD (CWB final price I/S St. Lawrence/Vancouver), Barley (No. 1 Feed, WCE cash I/S Lethbridge), Corn (No. 2 CE cash I/S, Chatham), Oats (No. 3 CW, WCE cash Track Minneapolis); Canola (No. 1 Canada, WCE cash I/S Vancouver); Flaxseed (No. 1 CW WCE cash I/S, Thunder Bay); Soybeans (No. 2, I/S, Chatham).

\* - CWB Pool Return Outlook, January 2000.

f - Agriculture and Agri-Food Canada forecast February 2000.

Source: Statistics Canada, Cereals and Oilseeds Review Series, Cat. No. 22-007



## **“2000 years of Prairie climate-How reconstruction of the past can help predict future droughts”**

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**Presented By:** Dr. Gemai Chen  
Associate Professor  
Department of Mathematics and Statistics  
Regina, Saskatchewan

**Presented to:** Grain World 2000  
Winnipeg, Manitoba  
February 28, 2000

# Reconstructing Drought History and Predicting Future Droughts

Gemai Chen

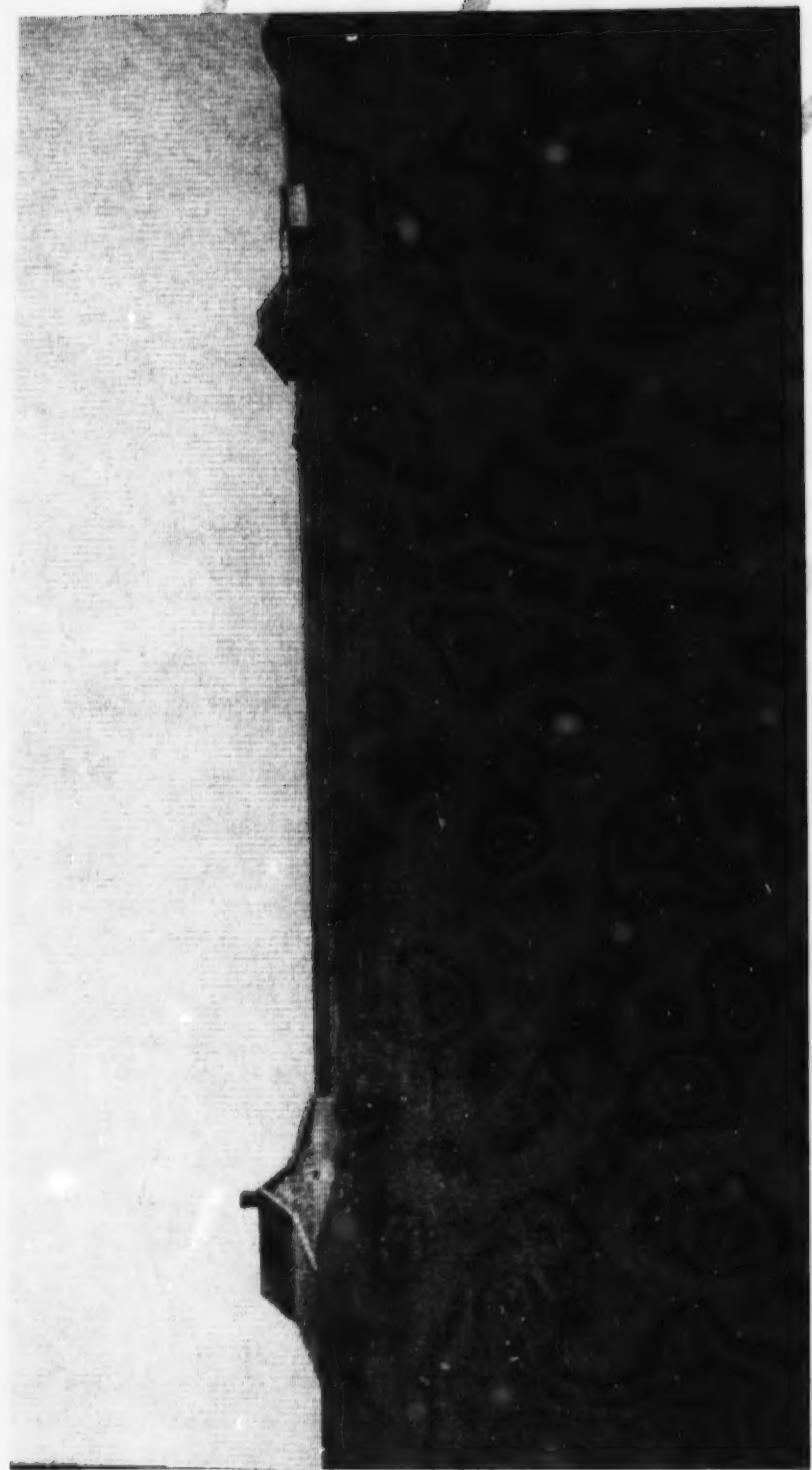
University of Regina

February 29, 2000 at GWC

# Outline of the Talk

- The need to know more about the droughts in Western Canada
- We do not have long drought record, what can we do?
- Modeling and Predicting Droughts
- Summary

# Drought Near Swift Current



# What Drought Can Do



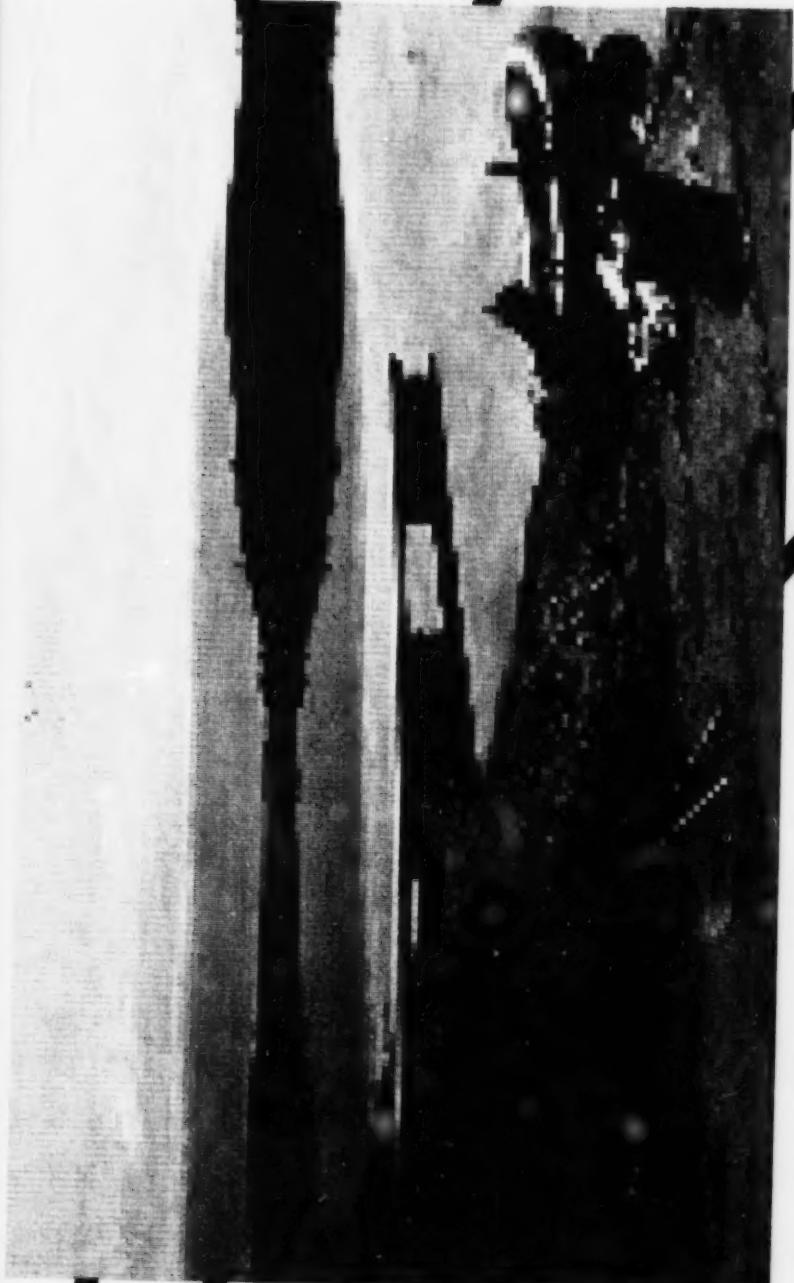
# More About Drought

- Drought related losses in Western Canada exceeded 1.8 billion dollars in 1988 alone.
- In Saskatchewan, annual drought insurance payouts averaged 32 million.
- In Manitoba, annual drought payouts averaged 40 million.
- In Alberta, annual drought payouts averaged 104 million.

# Drought Records

- Instrumental records of drought are short.
- Can we use tree-ring or rainfall data to extend our record of drought history?
- A biological approach to create drought related information.

# Humboldt Lake



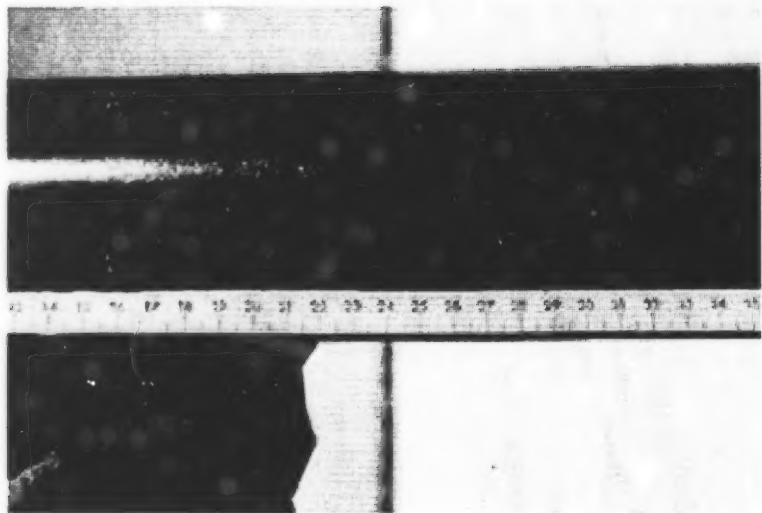
# Coring I

Drilling a hole  
through which  
the mud core will  
be taken



# Coring II

Laminations in  
the sediment

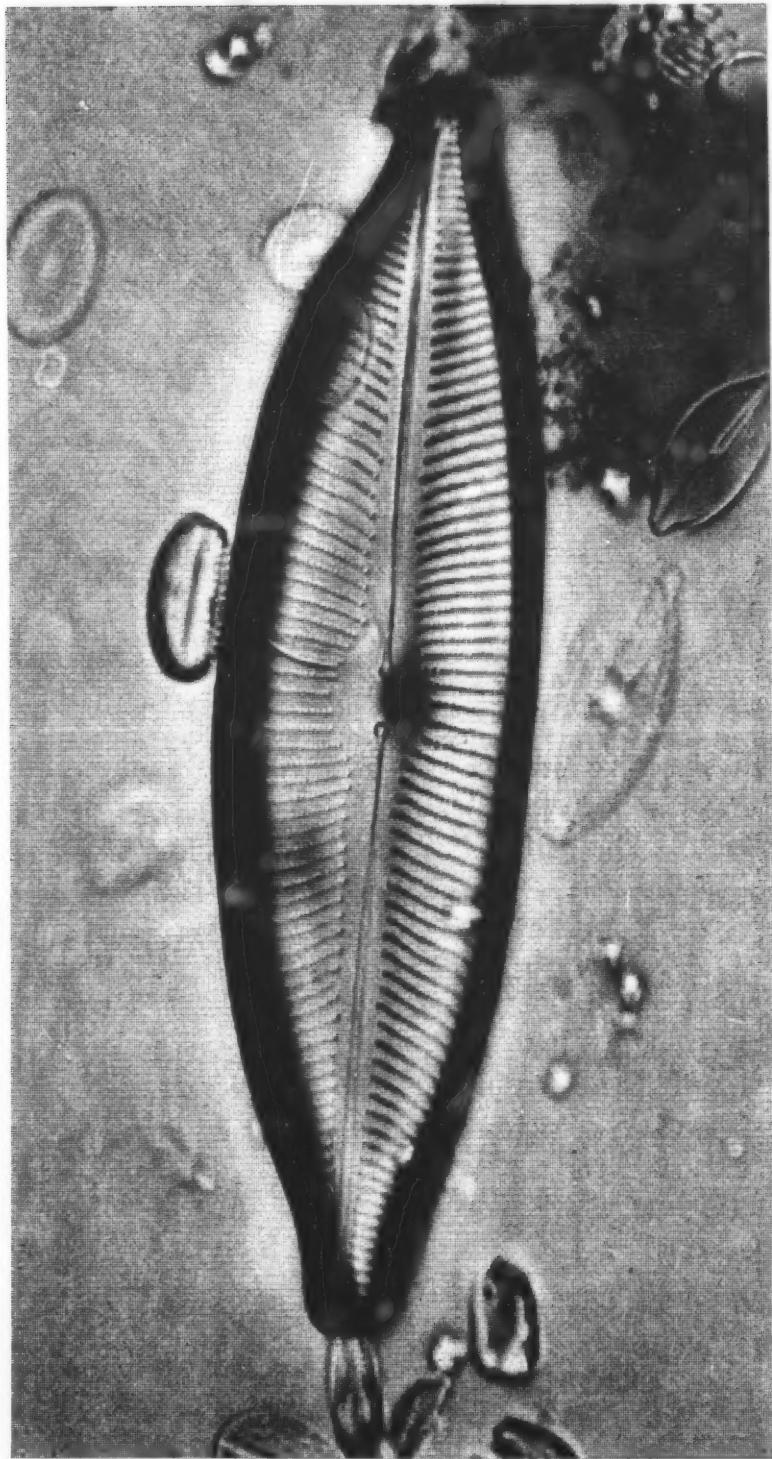


# Coring III

Sectioning and  
describing the  
sediment



# Diatoms at High Magnification



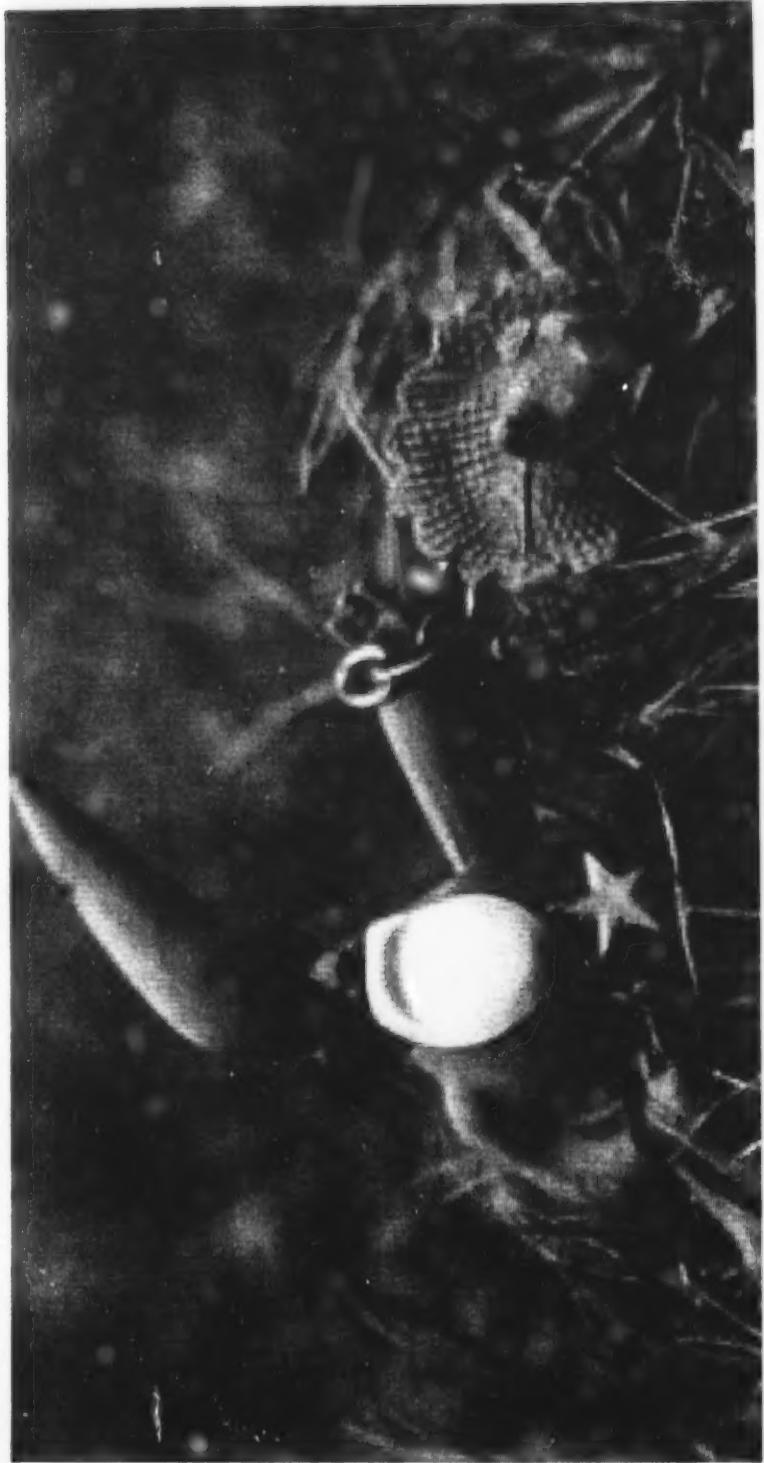
# Diatom

*Diatom is microscopic unicellular alga with siliceous cell-wall, found as plankton and forming fossil deposits.*

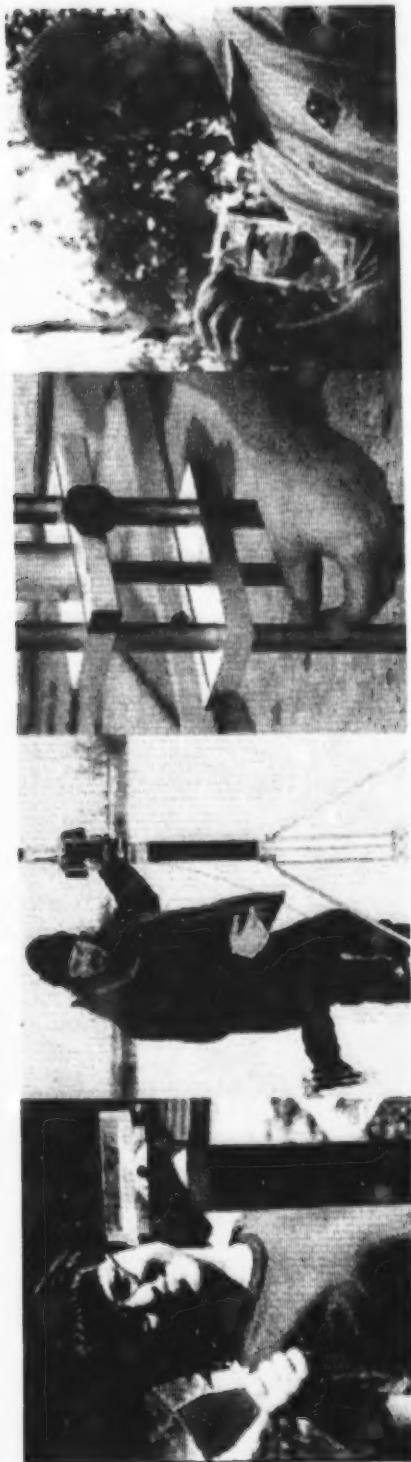
Advantages of using diatom:

- There are many species.
- Relatively narrow habitat range.
- Preserve well in sediments.

Your Tour Guide Diatozmo and  
His Limnosaur



# More About Sectioning



# Diatozmo and a Vial of Sediment



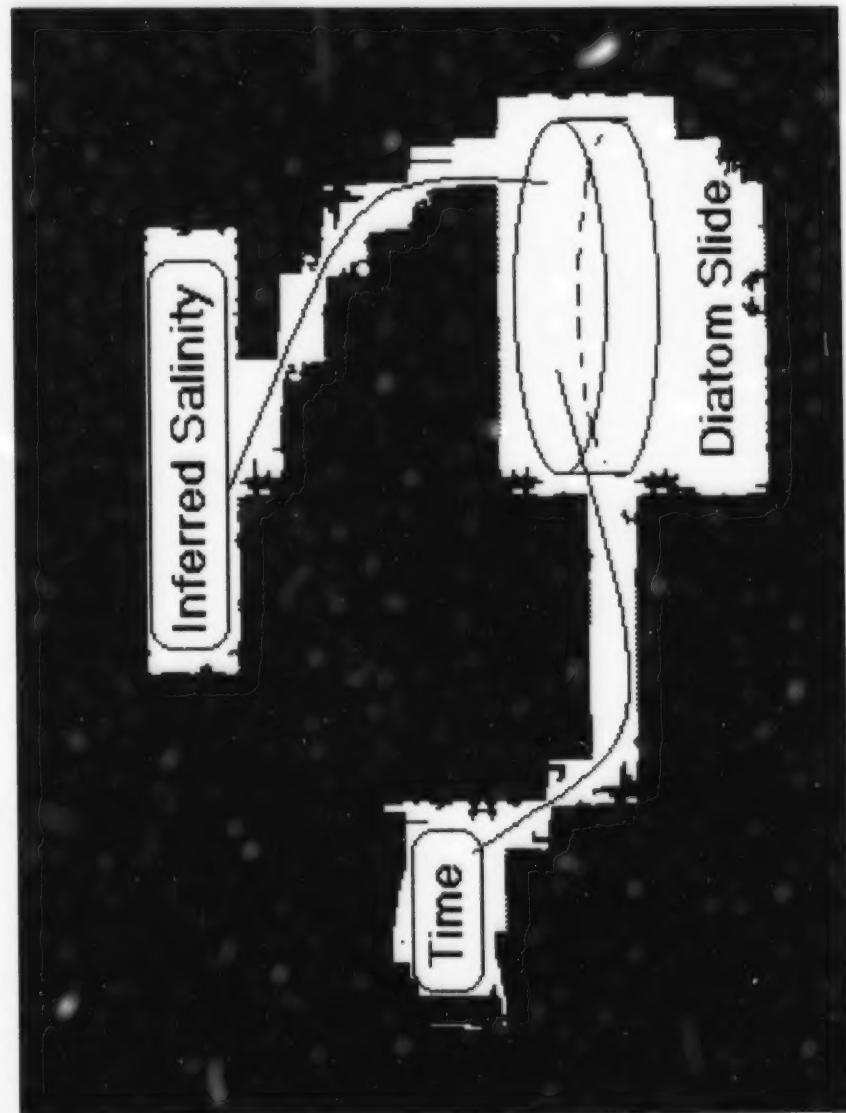
Adding Diatom Slurry (left) and The  
Limmosaur vigilantly Protecting the  
Drying Cover-slips



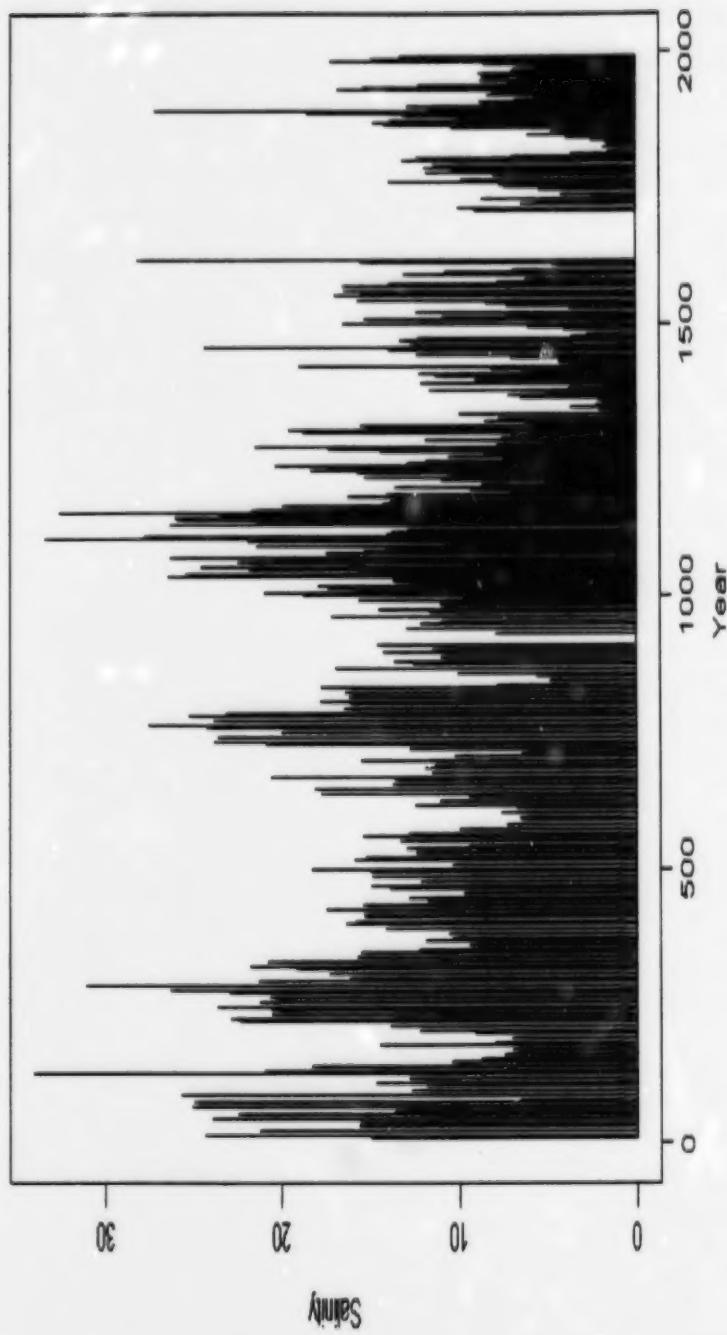
Diatozmo Holding a Finished  
Slide and Diatoms from a  
Sediment Core



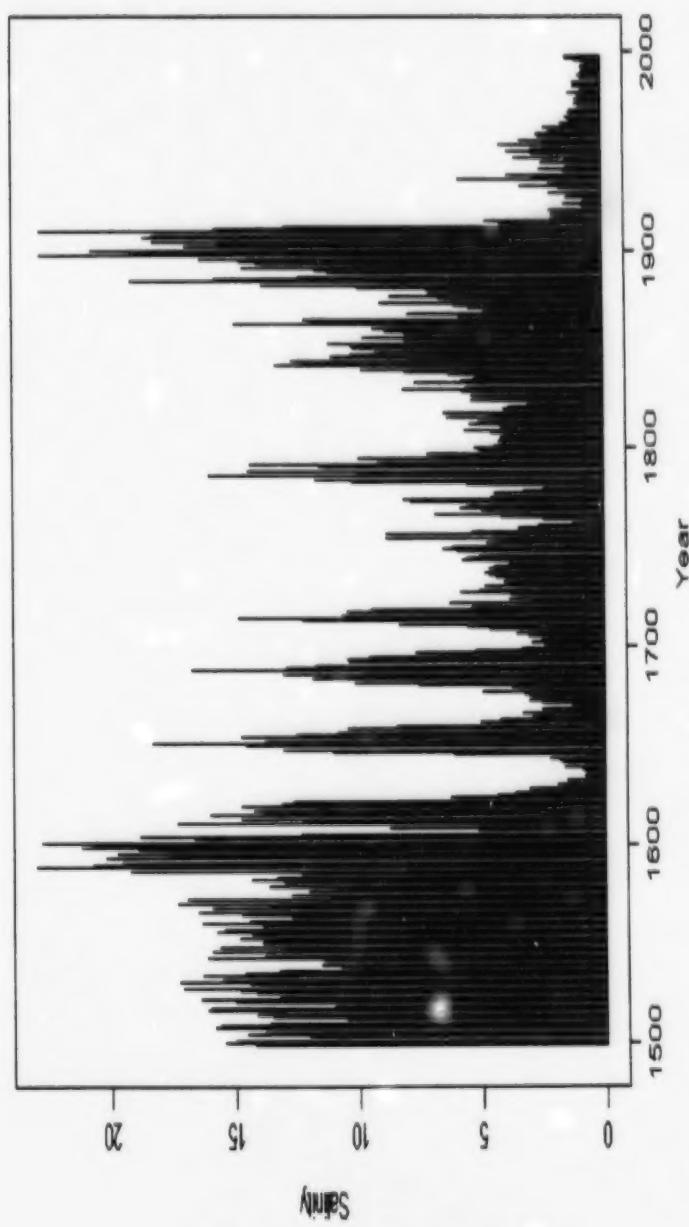
# Inferred Salinity and Time



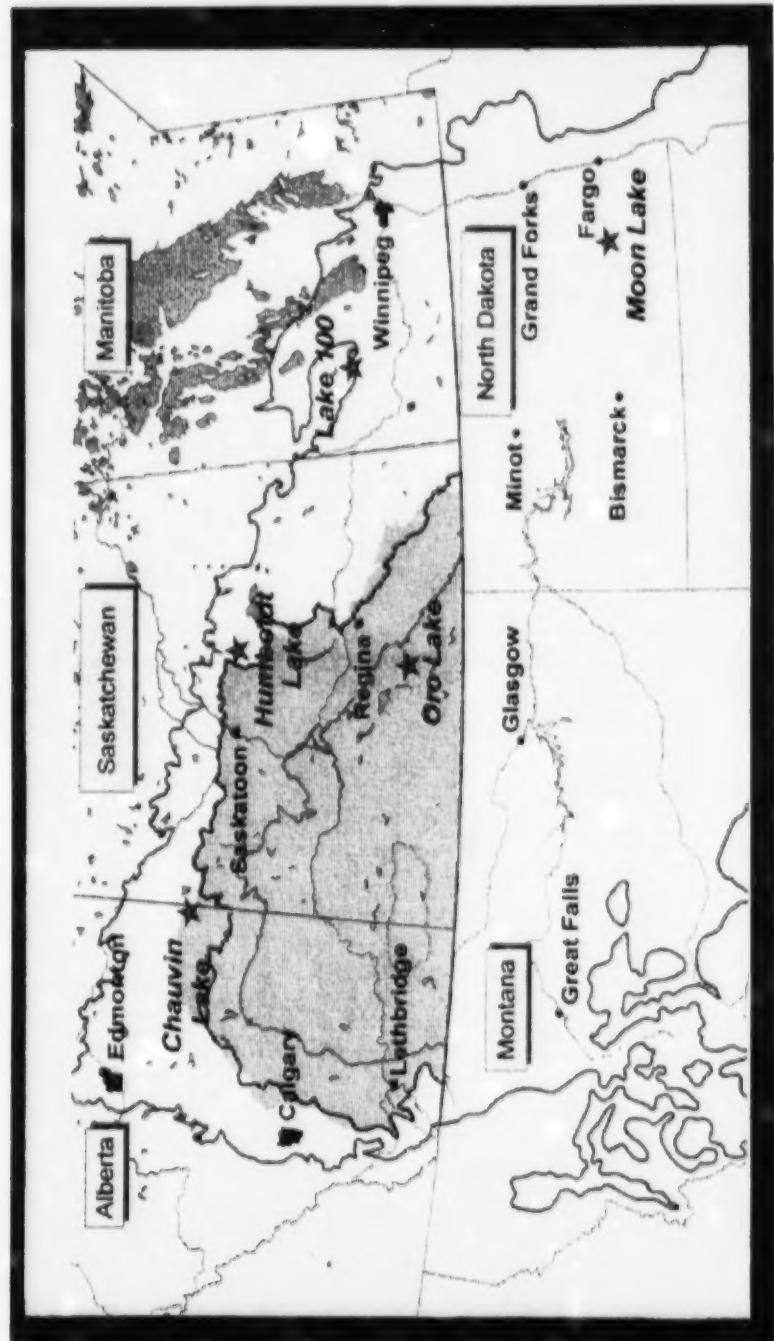
# Inferred Salinity Time Series (Moon Lake)



# Inferred Salinity Time Series (Humboldt Lake)



# Study Map



## Three Goals

*We want to know more about*

- Frequency of droughts.
- Duration of droughts.
- Probability of future droughts.

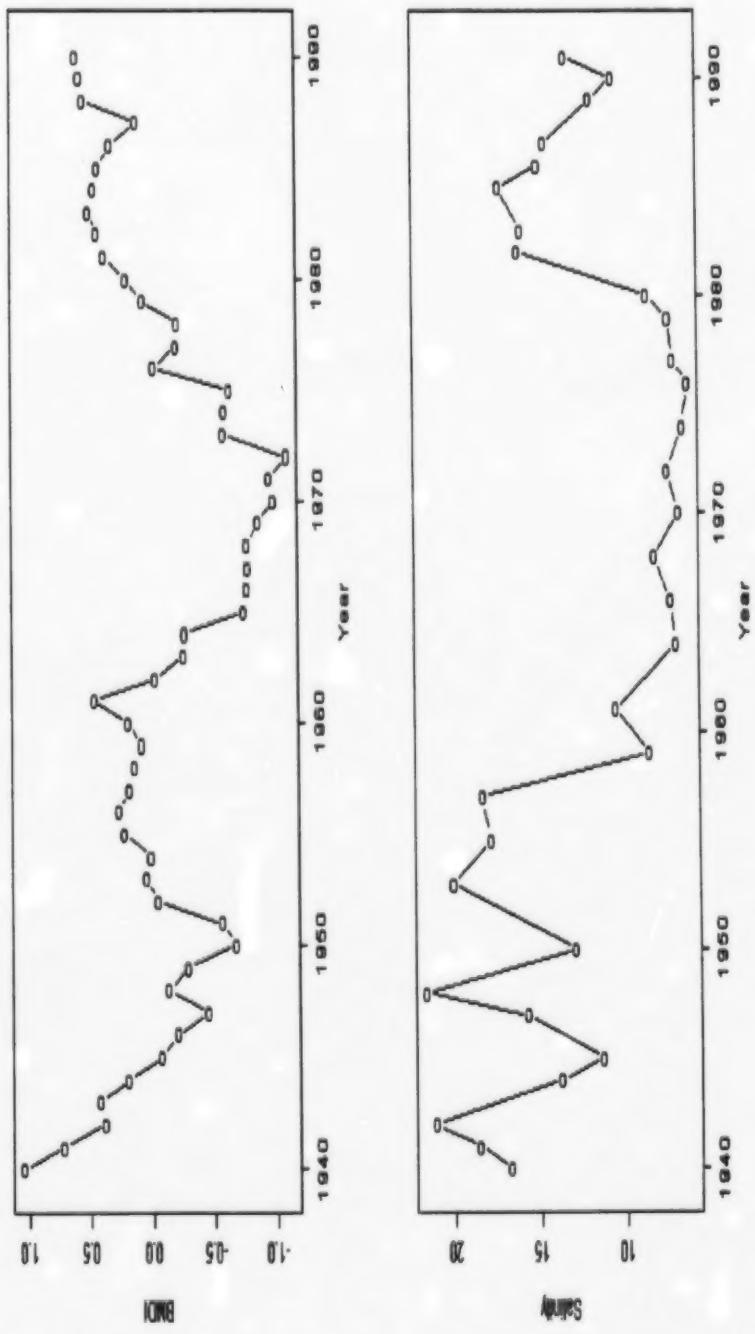
# A Basic Research Question

Is salinity time series indicative of drought history? We compare salinity time series with a drought index.

**BMDI: Bhalme-Mooley Drought Index.** This is an index derived from precipitation records directly. For illustration, we use

- (1) Salinity records from Moon Lake, North Dakota.
- (2) BMDI from Valley City (8 km northeast of Moon Lake)

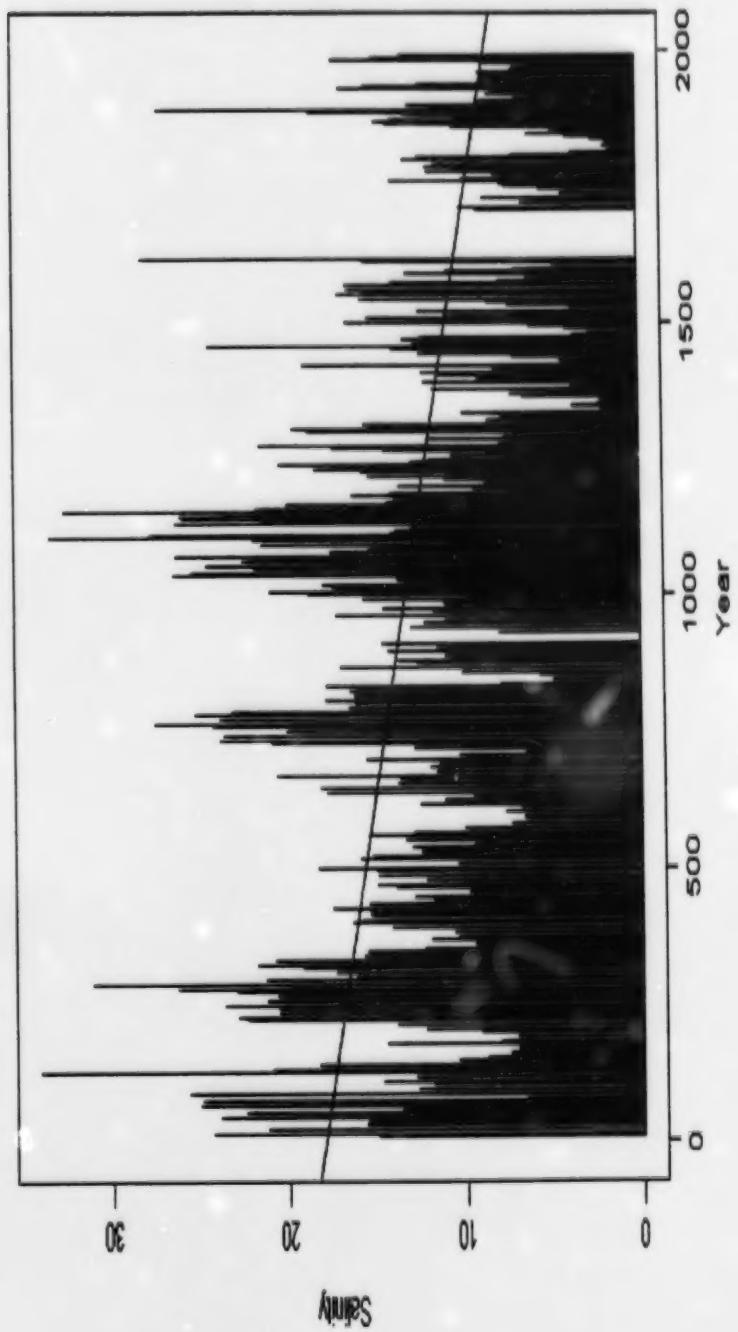
# BMDI and Salinity Comparison



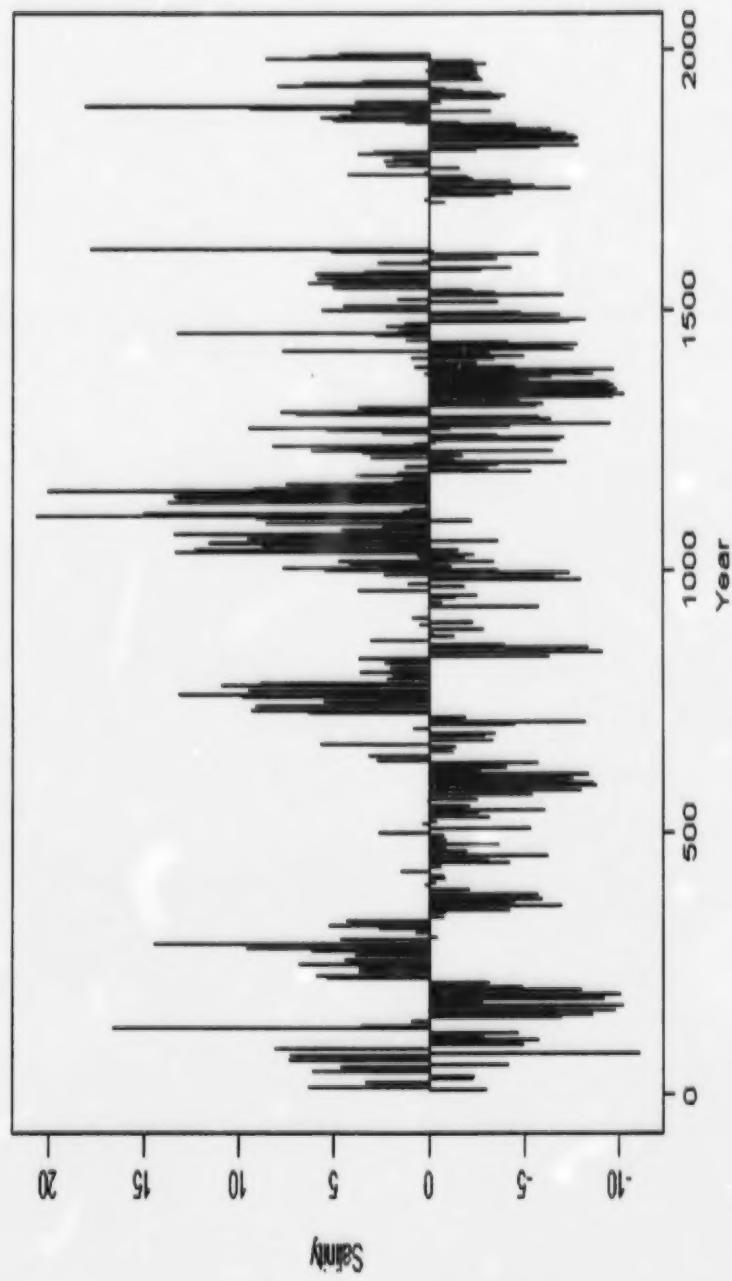
# Analysis of Drought Events

- Definition of droughts.
- Drought inter-arrival times.
- Model drought inter-arrival times.
- Predict future drought.

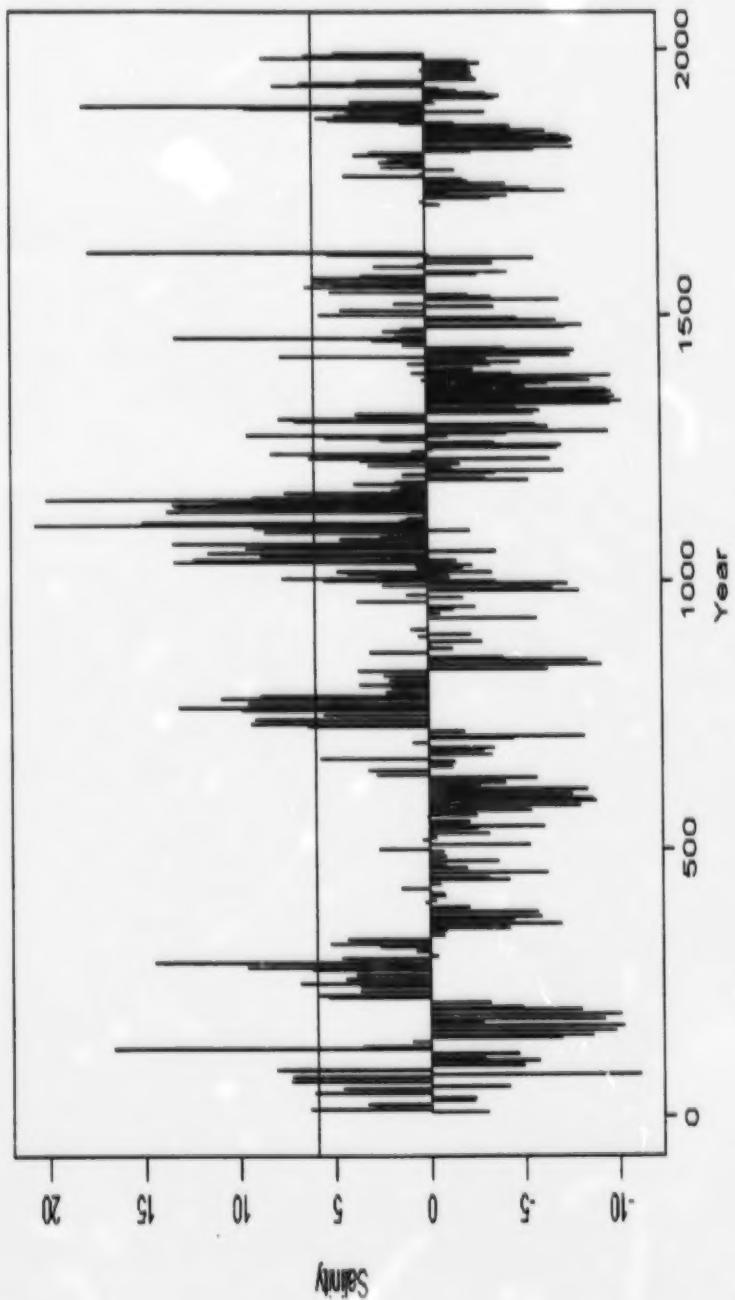
# Fit a Linear Trend



# Detrended Salinity Time Series



# Drought Inter-arrival Times



# The Weibull Model

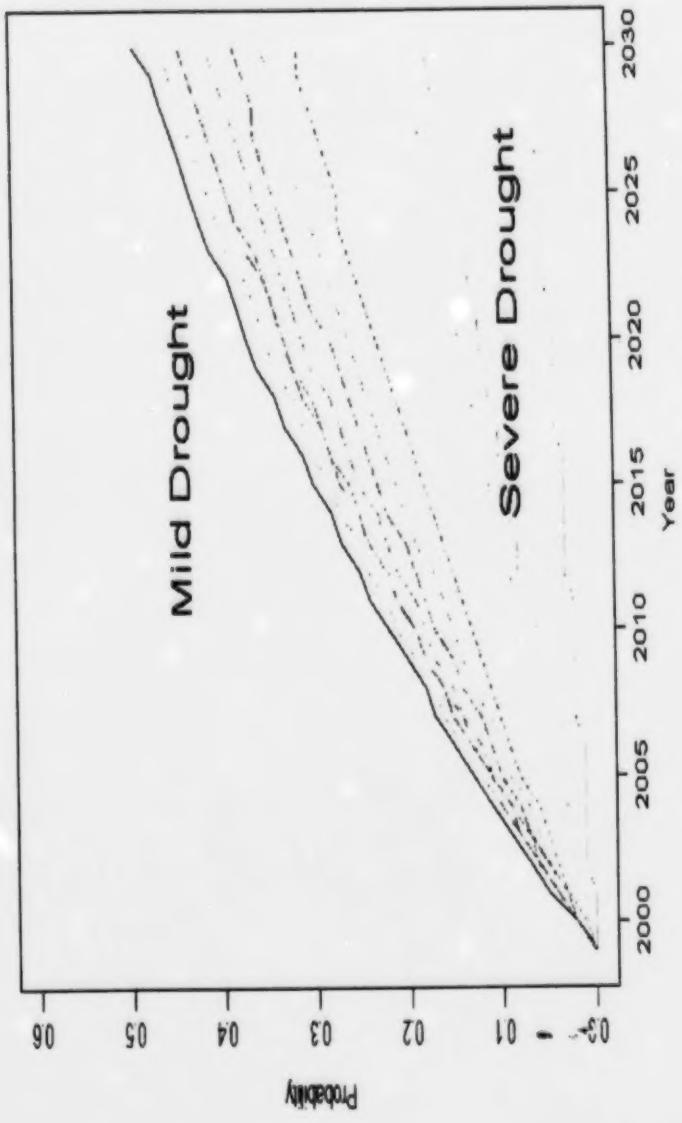
Let  $X$  denote drought inter-arrival time. We can model  $X$  using the Weibull model with density function

$$f(x) = \frac{\beta}{\alpha} \left(\frac{x}{\alpha}\right)^{\beta-1} \exp\left\{-\left(\frac{x}{\alpha}\right)^\beta\right\}$$

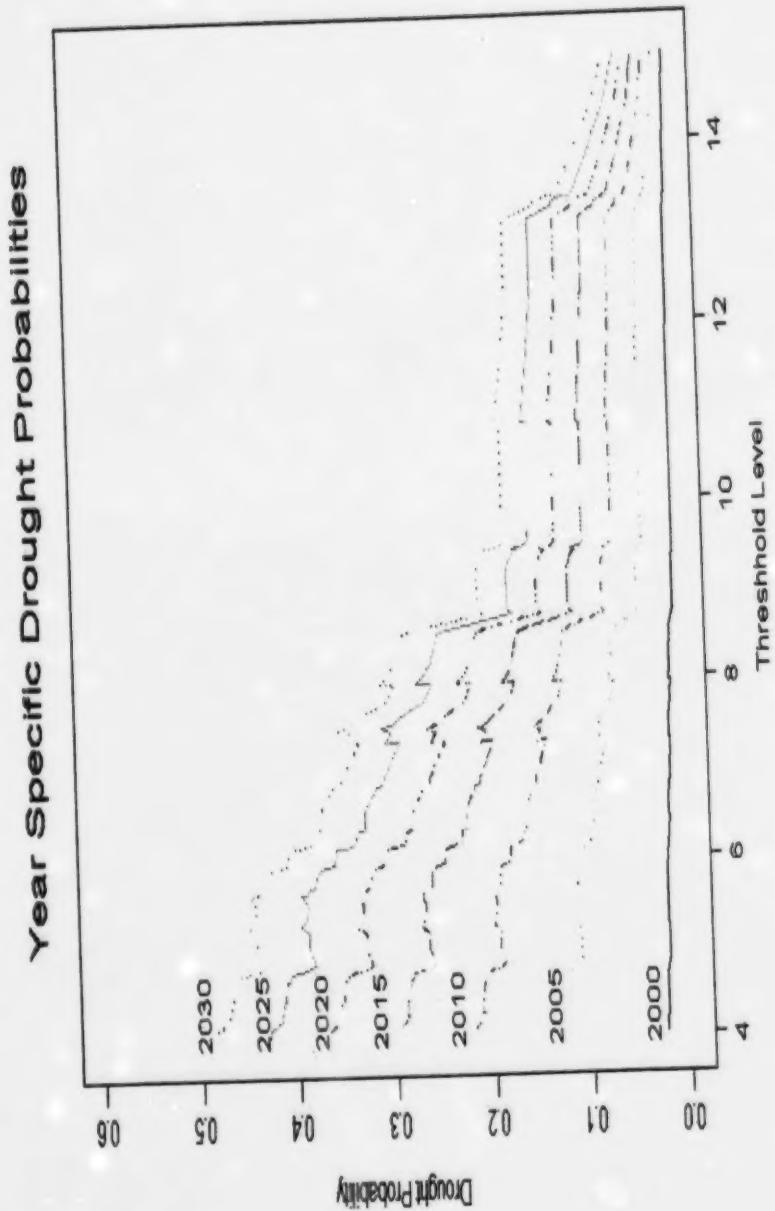
where  $0 < x$ ,  $0 < \alpha$  and  $0 < \beta$ . Let  $x_o$  be the time from the last drought to 1999. Then

$$P(X \leq x \mid X \geq x_o) = \frac{e^{-(x_o/\alpha)^\beta} - e^{-(x/\alpha)^\beta}}{e^{-(x_o/\alpha)^\beta}}$$

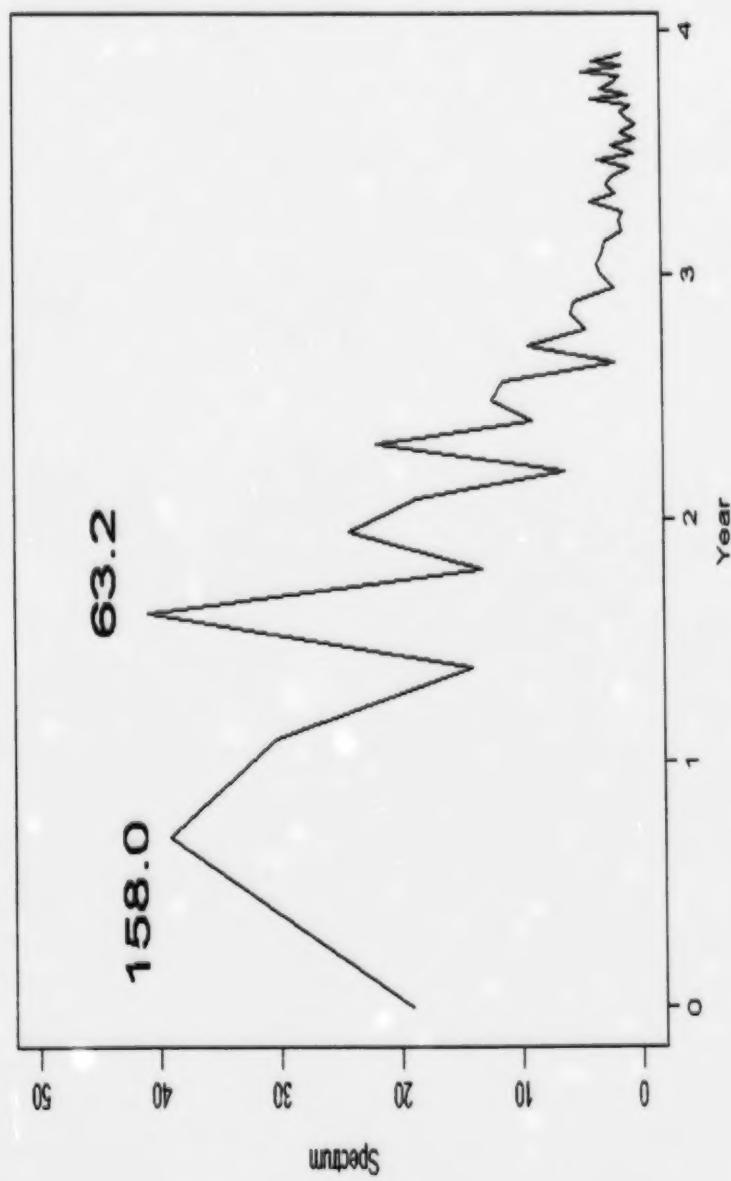
# Drought Probabilities (Moon Lake)



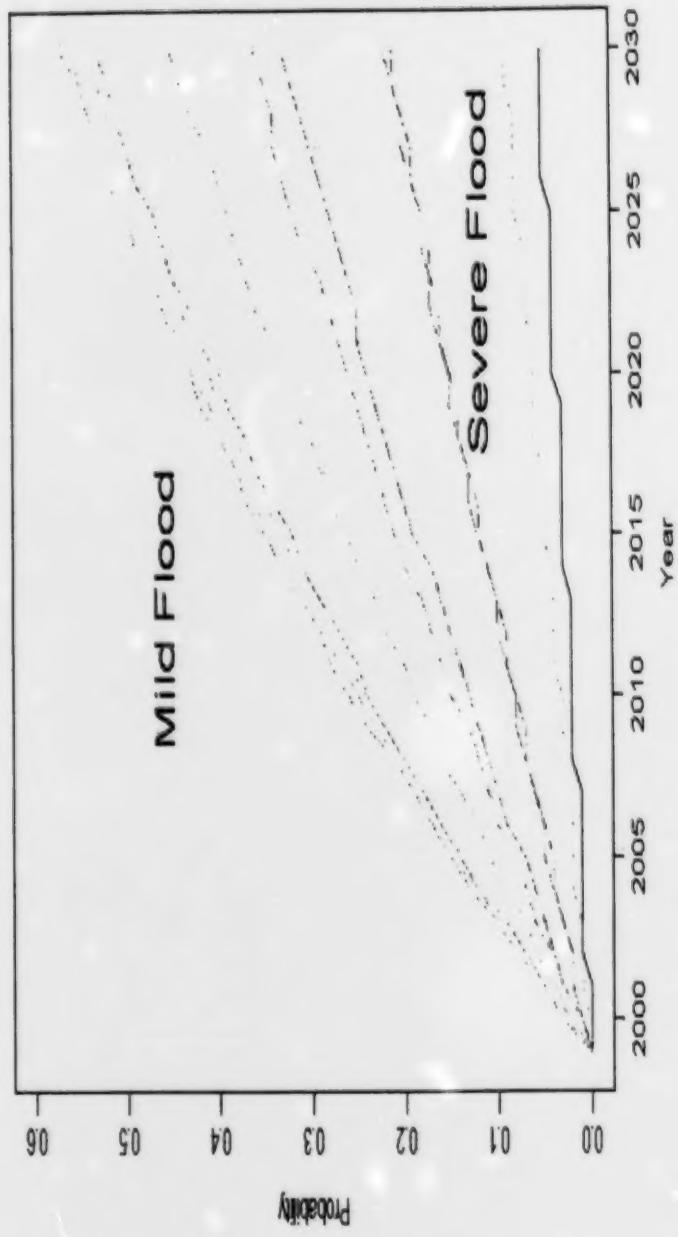
# Year Specific Drought Probabilities (Moon Lake)



# Drought Periodicity (Moon Lake)



# Flood Probabilities (Moon Lake)



# Drought Estimates Based on Moon Lake (Unit is Year)

- Inter-arrival time: Mean=63.4, Mode=10, Max=442, Min=5, #/100 Year=1.46.
- Duration: Mean=5.5, Mode=1, Max=31, Min=1.
- Periodicity: 158.0, 63.2.

# Flood Estimates Based on Moon Lake (Unit is Year)

- Inter-arrival time: Mean=40.0, Mode=5, Max=195, Min=5, #/100 Year=1.97.
- Duration: Mean=8.4, Mode=1, Max=41, Min=1.
- Periodicity: 63.2.

# Drought Estimates Based on Humboldt Lake (Unit is Year)

- Inter-arrival time: Mean=51.0, Mode=No, Max=164, Min=5, #/100 Year=1.08.
- Duration: Mean=5.5, Mode=1, Max=51, Min=1.
- Periodicity: 81.2, 32.5.

## Flood Estimates Based on Humboldt Lake (Unit is Year)

- Inter-arrival time: Mean=43.9, Mode=22, Max=268, Min=2, #/100 Year=1.77.
- Duration: Mean=11.1, Mode=1, Max=50, Min=1.
- Periodicity: 162.3, 81.2.

# Summary

- Severe droughts are a regular, cyclic feature in SK and MB. Long droughts (5-10 yr) can be expected twice per century.
- Severe droughts have not occurred last century but have a 48% probability of occurring by 2030. Severe floods are equally likely.

# Investigators (All Come from University of Regina)

- Dr. P. Leavitt
- Dr. G. Chen
- Dr. J. Rusak
- Dr. M. Chen
- Dr. S. Wunsam
- Mr. M. Graham
- Mr. J. Hovdebo
- Mr. J. You
- Mr. L. Zhang



## **Beef Outlook**

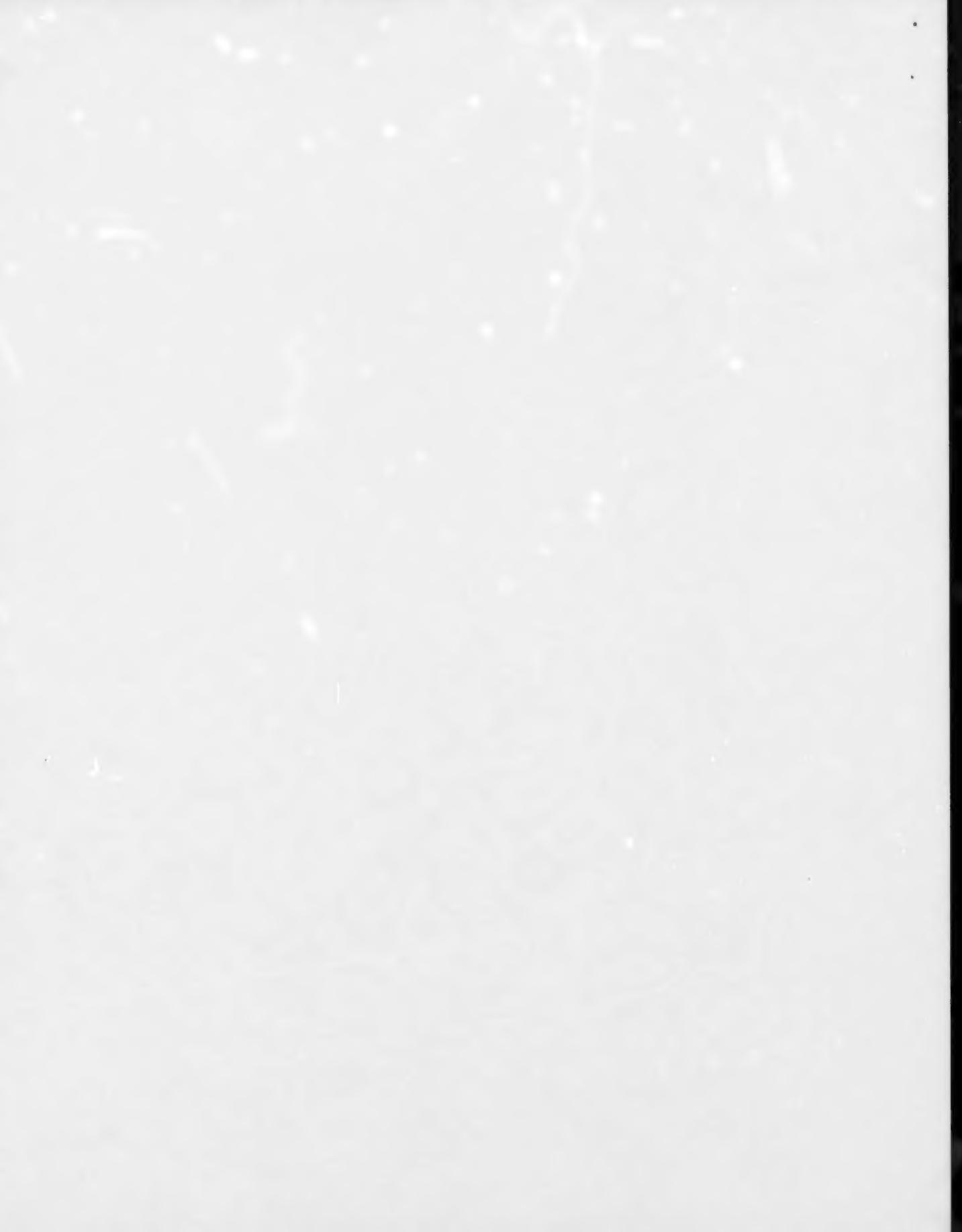
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**Presented By:**

**Charlie Gracey  
Canadian Beef Grading Agency  
Calgary, Alberta**

**Presented to:**

**Grain World 2000  
Winnipeg, Manitoba  
February 29, 2000**



# Cattle Industry Outlook and Analysis - 2000

Prepared and delivered by Charles Gracey  
Feb 28 2000

## Acknowledgments

Much of this outlook and analysis is based on data series developed and maintained by CANFAX. I played a role in the development of some of these data series but am now mainly a user of the data. Thus I wish to thank CANFAX for making their data series available to me.

## Introduction

The Cattle Industry in Canada has undergone a major transformation in the past 12 years. For reasons that will soon become apparent I have chosen Jan 1 1987 as the starting point for this transformation. Table 1 below highlights the main points.

**Table 1 Some Basic Comparisons between the Canadian and US Beef Industries**

	1987	1996	1999 (Est.)	% Change (1987 to 1999)
<b>Beef Cows</b>	Million Head	Jan. 1		
Canada	3.13	4.38	4.21	+34.5
USA	33.8	35.3	33.5	-0.9
% Canada	8.5	11.0	11.2	
<b>Production</b>	Billion Lb.	Carcass Basis		
Canada	2.13	3.08	3.40	+59.6
USA	23.57	25.52	26.4	+12.0
% Canada	8.9	10.8	11.4	
<b>Consumption</b>	Billion Lb	Carcass Basis		
Canada*	2.14 (1.80)	2.00 (1.56)	2.13 (1.57)	-0.52% (-12.8%)
USA	25.2	25.8	25.9	+2.7%
<b>Exports</b>	Million Lb.	Carcass Basis		
Canada	332	1,526	1,679	+405%
USA	600	1,877	2,449	+308%
Can/USA %	55.3	81.3	68.6	
<b>% Of Prod.</b>	<b>Exported</b>			
Canada	14.5	49.5	50.0	+244.8
USA	2.6	7.3	9.0	+246.2

\* The consumption figures in brackets show Canadian consumption of Canadian Production.

The Table above contains some very compelling information. If we begin with beef cow numbers we note that cow herd expansion in Canada was much more pronounced in the 1987 to 1996 period than in the USA. In fact our beef cow herd commenced the last cyclic expansion in 1987 and in the USA the beef cow herd continued to decline and did not commence expansion until 1991. As a consequence the Canadian beef cow herd increased its share of Canada US total cows from 8.5% to over 11% in that period.

The second series of data shows the same trend for production, that being that Canada increased its share of production from just 9% of Canada/US totals to over 11%. If we next look at consumption I have shown two figures for Canada. The first figure is total consumption, which includes imports. It shows a small decline despite the 14% growth in human population. But the figure in brackets shows consumption of Canadian production and that shows a decline of 12.8%. This is a most remarkable observation. It tells us that the rapid and sustained herd expansion from 1987 to 1996 occurred despite declining beef consumption and, in fact, declining beef demand in the Canadian market place. We increased our breeding herd by 1.25 million cows despite declining consumption and declining demand.

It becomes obvious therefore that the signals that cow calf producers were receiving to expand their cow herds had nothing to do with domestic demand conditions in the home market. And since about 95% of our exports during this period went to the USA it is equally obvious that we need to look there for the stimulus to Canadian herd expansion. But here we confront a conundrum. What signals could possibly be generated in the US market that would be taken as a signal to expand aggressively in the Canadian market but be ignored at home? I have suggested that a part of the reason for earlier and more rapid herd expansion in Canada was due to the illusion of higher prices caused by a declining exchange rate after 1984. Other factors almost certainly were some of the Crop Offset programs launched to compensate livestock producers for subsidized grain transportation to export and perhaps our Tripartite stabilization programs played a role.

But this is not the time or place to speculate on causes. It is merely important and necessary to note that the character of the Canadian cattle industry has changed dramatically in the last 12 to 15 years. The industry has changed in that period of time by increasing its size and output almost 50% and by becoming hugely dependent upon its export competitiveness. Annually this industry now exports fully 50% of its production but its Achilles heel is that it is still dependent upon the US market for well over 90% of those exports. Canada in the period I have just reviewed moved up to become the fourth largest beef exporter in the world and ranks only about 10<sup>th</sup> in size.

It was our rapid increase in exports to the USA since 1990 that caught the attention of a segment of the US cattle industry in 1997. This occurred coincident with the cyclical peak in supply and the cyclical trough in prices. The result, of course was the

two complaints leveled by the R-CALF against our live cattle exports in the fall of 1998. The Countervail case was based on allegations that the Canadian industry was being subsidized; the Dumping case claimed that we were trading unfairly by selling cattle below the cost of production. Our industry beat the first challenge outright by demonstrating that the industry was not unduly or improperly subsidized. We couldn't beat the rap that we were selling at 'less than fair market value' simply because of the ridiculous interpretation that selling below the cost of production is deemed to be selling at less than fair value. Selling below production costs is occasionally but recurrently inevitable in the cattle industry and the irony of course is that our price structure is dominated by US market conditions. So we were very much in the role of the passenger being blamed for the bus accident. However, while we didn't beat the original rap of selling below production costs, the USITC determined that our relatively low penetration of the US market was not injurious. The key to that determination was our low penetration of that market. As you may know that favourable decision is now under appeal.

I thought it appropriate to commence this outlook analysis without at least a brief reference to these recent difficulties. My own impression is that, costly and nerve wracking as the past year has been for the cattle industry, we now have asserted ourselves in the North American market. It will be important in future WTO trade negotiations to try very hard to change the presently unacceptable rules of the game to expunge the illogical notion that selling below cost of production is a proper basis for a trade challenge especially between nations that have a bilateral free trade agreement. But the measure of victory we have already achieved is vitally important. The Canadian industry has established, through its efforts, that a market penetration of around 4% to 5% of the US industry at the peak of the supply cycle is not sufficient to cause injury, even under the specious charge of having done so at unfair prices below cost of production. This was a huge achievement for the Canadian industry and a necessary one.

This was prologue to an analysis of future probabilities in the industry.

### **Where are we on the Cattle Cycle?**

As we all know the cattle cycle has two main manifestations, breeding cow numbers and supply. Obviously the supply cycle lags the cow numbers by about two years. The cow cycle peaked decisively in 1996 and beef cow numbers at July 1 1999 were down about 4.4% in both countries.

The Jan. 1 2000 cattle number estimates are now in for both Canada and the USA. Canadian total cattle numbers are down 2% while US numbers are down 1%. Beef cow numbers are down 1% in both countries and in both countries heifers for breeding are unchanged.

Supply lags, but doesn't always closely parallel, the decline in cow numbers. Steer marketings follow the cycle faithfully but female marketings can be more erratic. Also carcass weights can be, and presently are, a factor. But it is now apparent that the

supply peak passed through the North American market in 1998. Total Canadian Production in 1999 was down 1%. That is expressed in domestic and export tonnage. Total numbers were down 6.5% but heavier carcass weights moderated the supply reduction. In Canada in 1999 domestic cattle slaughter was up about 5.7% numerically and 7.2% by tonnage from a year earlier but exports of slaughter cattle were sharply lower by about 300,000 head or 28%. Meanwhile production in the USA is reported to have increased about 3% by weight.

Future supplies depend a great deal on whether we are still in the liquidation phase of the cattle cycle, at the bottom of the liquidation phase, or indeed whether the cycle is now set to expand. The sex ratio in the 1999 slaughter remained very high at 1.07 females to 1 male so on that basis I believe our breeding herd cow herd, dairy and beef combined, continued to decline and will fall to about 5.7 million head as at July 1 2000.

### Supply Projections

Before I talk about expected cyclical supply reductions I must point out the other dramatic development that occurred mostly in the last 4 months of 1999 and that was the importation of about 180,000 head of feeder cattle mostly under the 'restricted feeder program'. That's an increase of roughly 130,000 head over 1998. Thus, whether these cattle are slaughtered domestically or re exported, they will add to industry output and this increase of 130,000 head on an expected domestic marketing 4.3 million is about 3%. So we need to keep that in the back of our minds as we contemplate cyclic reductions from the domestic herd.

Further supply reductions from the domestic herd are now predicted for this year and for 2001 and, in my opinion 2002 as well. The most recent beef supply forecasts by Cattlefax for the USA call for supply reductions of 2.5 and 4.0% in 2000 and 2001 respectively. My own supply forecasts for 2000 and 2001 reductions are as follows,

#### • Steers

Total Steer marketings, domestic plus export, declined 6.3% in 1999. In 2000, because of earlier reductions in the cow herd, one would expect steer marketings to decline at roughly the same rate with a two year lag. My analysis, explained in the accompanying article call for very small reductions to 1,963.6 in 2000 and 1944.0 in 2001. These declines are of the order of 0.75% to 1% each year.

#### • Heifers

The number of heifers marketed in 1999 was down 2.1% and will show a more pronounced decline in 2000 and 2001. In 1996 and 1997 heifer slaughter exceeded two thirds of steer slaughter and in 1998 reached the unprecedented level of 73% of total steer marketings. In 1999 the rate of heifer slaughter, rose further to 76.2% of steer numbers marketed, the highest rate on record.

Such unprecedented rates of heifer slaughter cannot be maintained and in fact the rate of heifer slaughter began to abate in the last half of 1999. The reason for the record

high rate of heifer slaughter in 1998 was that the cycle had just peaked in 1996 and herd reductions had commenced, thus diverting large numbers of the 1996 heifer calf crop to feeding programs and away from breeding herds. Weaned heifer calf prices of about \$1.10 per cwt in the fall of 1994 had dropped to \$0.75 by autumn 1996 so liquidation was underway. Those heifers reached market mostly in 1997 and 1998. Weaned calf prices recovered in 1997 and rebounded in 1998. But most producers again sold their heifers for feeding instead of increasing their breeding herds. What they did instead was reduce cow marketings in 1999 to an absolute rock bottom culling rate of about 9%.

As I suggested these heifer marketings cannot be sustained and I would expect a rather sharp decline over the next two years. In 1998 and again in 1999 we marketed almost 26 slaughter heifers per 100 cows and with the high rate of heifer retention on the dairy side we obviously just kept back enough heifers to maintain a static beef herd. If heifer marketings were now to drop back to their long-term average of about 19.5 per 100 cows we will see an immediate drop of nearly 22 % in heifer marketings in 2000. . Cow calf producers of course are in a quandary. The record high feeder replacement prices for heifer calves in the fall of 1999 sent conflicting messages. The cow calf producer had to decide whether to take the certain cash by selling his heifers or to bet that this was the time to expand his breeding herd. Of course in some cases heifers that were sold returned to someone else's breeding herd. This then is the toughest part of the supply forecast. Certainly heifers marketed for slaughter will decline significantly in 2000 but I think feeding costs are too low and replacement prices too attractive to expect a really sharp hold back of heifers for breeding from the 1999 calf crop. I expect a larger hold back of heifers from this spring's calf crop.

I therefore expect to see declines in heifer slaughter of about 11% per year in 2000 and 2001.

#### • Cows

The number of cows marketed can't go much lower. In 1999 we disposed of about 700,000 cows. That is about 12.2% of the cowherd but because the dairy culling rate is at least 20% that means that beef cow culling fell to about 10%. In absolute numbers we haven't marketed fewer cows since 1994, the last big push in the last cycles expansion. Aside from 1994 we haven't marketed fewer cows since 1980. It seems to me that at this stage of the cycle with very attractive prices for heifers, whether sold for feeding or breeding, cow marketings will stay at the lowest level possible which, as I have already suggested is about 12%. I am also told that the rate of dairy culling may be somewhat reduced due to the very strong demand for 'springer' heifers in the US market. Thus I don't think we will see more than 12% of the cow herd marketed in either 2000 or 2001.

#### • Bulls

The number of bulls marketed is not great, about 70 to 80,000 per year and are included only to get at a projected total. Here then are the total projected marketings for 2000. Notice that I have felt compelled to add in the substantial increases due the sharp increase in feeder cattle imports under the restricted feeder program last fall.

Table 1. Projected Cattle Marketings 2000 (Includes Net Exports)

(Thousands of Head)

	1999	2000	+ Imported feeders	Total	
Steers	1,978	1963.6	+78	2041.6	+3.2%
Heifers	1,507	1305.4	+52	1357.4	-9.9%
Cows	701	684.0		684	-2.4%
Bulls	77	77		77	NO Change
<b>TOTAL</b>	<b>4263</b>	<b>4030</b>		<b>4160</b>	<b>-2.4%</b>

The feeder imports in the above table are those *additional* to those imported in 1998. Without that increase we might have seen a drop of about 1.2% in steer marketings and a sharper 11.7% drop in heifer marketings.

Some may be surprised at these forecasts and might have expected sharper declines. Let us remember however, that the sell off phase of this cattle cycle has been quite modest to date at only about 4.4% between 1996 and 1999. Thus we should not be expecting big supply reductions in the Canadian market. So far the reduction phase of the cattle cycle has also been the shortest and most moderate we have ever experienced.

I wish to re emphasize a point that I made at the outset. This last cycle had nothing whatever to do with domestic demand. The person who decides the course of the cycle is the cow calf producer and the clearest signal he or she receives is the price of weaned calves in the fall of each year. In the last cycle other factors than domestic beef demand lent all of the strength to feeder prices. These factors have included cheap feed grains, a favourable exchange rate and ready access to the US market for both live cattle and beef. At the present time the down side of the cycle is certainly modest and appears short lived and that also is due to low costs of gain.

That is my personal contribution to this outlook analysis talk. I will now continue to enlarge on some of these points and otherwise to show you the beef cattle situation and outlook as prepared and offered by CANFAX.

Since this is not primarily my work I would just like to explain that CANFAX has over the last several years evolved and developed a very comprehensive data series that makes this presentation possible. Canfax is, among cattlemen, a trusted source of reliable information. Thus while I have already given my own analysis and prognostications, I will walk you through several very interesting slides and comment where appropriate.

### **1. Canadian Total Cattle Numbers**

Except to show you this slide on total Canadian cattle inventories, I will reserve my comments for the next slide that deals with cow numbers rather than total cattle numbers.

### **2. Total Beef Cow Numbers**

In this slide of course the cattle cycles since the early 1970's is apparent. I would draw your attention to four points. Note first the false start in cyclic expansion in about 1979. That was quickly halted and sharply reversed by the very high interest rates of 1981 and the ensuing recession. Note as well in this depiction that the last cycle started to expand as I said earlier in 1987. Note also that in terms of numbers the most recent cycle fell short of the 1975 cycle peak. Finally note that CANFAX forecasts a very slight increase in beef cow numbers in 2001.

### **3. Beef Heifers for Breeding**

This slide illustrates the precipitous decline in breeding beef heifers after the 95 cycle peak. That is what fueled the record high rates of heifer slaughter.

### **4. Beef cow Distribution by Province**

This familiar slide merely shows the nation wide distribution of beef cows. For several years now about 85% of the national herd is found on the prairies or in BC.

### **5. US Cattle Inventory, and 6. US Beef Cow Inventories**

In these next two slides is brought home the startling differences between the US and Canadian cattle cycles in the 1990's. I commented on this in my earlier remarks. It is an issue that was of some concern during the recent trade dispute.

### **7. Heifer Slaughter Ratio**

Heifer: Steer slaughter ratios and female: male slaughter ratios are tools that we use to estimate the rate of cyclic contraction or expansion and they are very good indicators. Note as I mentioned earlier the very high ratios post 1995 and compare these to the long term average and previous peaks.

### **8. Beef Cow Culling rates**

With record high rates of heifer slaughter cow calf producers cut cow culling to the bone. This depiction shows that culling rates have been as low or lower in the past but we can't go much lower than 10% for very long.

### **9. Canadian Beef Production, 10. Output per cow and, 11. Carcass weights**

If you recall the cow numbers I showed you earlier you realize that we are now producing substantially more beef with fewer cows. As shown in the next slide output per

cow has increased steadily and the next relevant slide on sharply increasing average carcass weights offers the almost complete explanation. I have analysed the data to see if improvements in reproductive performance has been a factor and it appears not to be the case.

### **12. US Beef Production**

As noted earlier Cattlefax projects supply reductions of 2.5% in 2000 and 4% in 2001.

### **13. Beef Cow Disposals**

This slide merely shows the disposition of our cull cows whether for domestic slaughter or export. Note the increasing exportation of these cull cows a trend likely to continue at this stage in the cycle.

### **14. D1, D2 Cow prices.**

D1 and D2 Cows are our top two cow grades and you can see the sharp advance in cow prices in 1999 as supplies shortened.

### **15. Alberta Beef Production**

The quite dramatic increase in Alberta beef production eclipses greatly surpasses their share of the cow herd confirming strong inward movement from BC and as far East as Manitoba. In fed cattle Alberta now accounts 70 % of national slaughter.

### **16. Grade Distribution**

Grading standards have not changed since a major revision and reemphasis on marbling was introduced in 1993. But there has been growing demand for better marbled beef and producers have responded with over 40% of all fed carcasses grading AAA or Prime in 1999

### **17 and 18 Feeder Prices 1998 and 1999**

These next two charts show the prices for long keep calves and short keep yearlings for 1998 and 1999. Note the surging prices in the last quarter of 1999. This is especially impressive, or foolhardy, because it occurred at a time when the outcome of our dumping case was not known.

### **19. Western Barley and 20 Ontario Corn**

I don't need to tell this crowd what has happened to barley or other feed grain prices.

### **21. Canadian feeder cattle Exports**

Besides increasing domestic production very rapidly we have also increased our feeder cattle exports. Note the surge in feeder cattle exports in the 1990 to 1993 period. This was the result of earlier expansion in the Canadian beef cow herd.

### **22 to 24. Feeder cattle Imports**

For many years feeder cattle imports have been restricted primarily because of concerns about Bluetongue and Anaplasmosis. Many Americans have felt our measures

were unnecessarily restrictive and cattle feeders this side of the border agreed. Nonetheless, despite efforts by the CCA to relax the restrictions they remained in place and many now believe that it was irritation over this issue that helped the R-Calf launch their 1998 trade challenges. Belatedly changes have now been made and feeder cattle may enter Canada under a 'restricted feeder program'. Under this program feeder cattle may enter Canada and must enter and remain in specified and controlled feedlots for a two-week period where they are tested and treated. After that period the cattle may move freely. As this chart and the next one show there was a pent up demand and one can see the surge of imports mostly in the last several months of 1999.

### **25. Canadian Dollar**

This slide should appear in every fifth slot in this presentation to remind us that a lot of the good prices experiences in the cattle industry are due to the eroding course of the US dollar. To a considerable extent prices have been an illusion and cattlemen are now well aware of the potential for moderated expectations should the dollar begin to recover. Many modern feedlot operators are prepared to hedge their positions in the money market so it is likely that the brunt of the dollar's appreciation will be borne by the cow calf producer. **The Canadian Dollar is one of the clouds on our outlook horizon.**

### **26. Calf, Feeder and Fed steer Prices**

This slide merely reminds us of the longstanding price spreads between Weaned Calves, Yearlings and slaughter cattle. Obviously this long standing pattern reflects the costs of gain.

### **27 and 28 Break Evens**

These next two slides bring us back to the present and show the monthly break even analyses we do. The Bars represent costs and the line represents cash prices. You can see that cattle feeding has been modestly profitable in the latter part of 1999 but also that those profits have been immediately bid back into stronger replacement prices and without a further price rise feeding profits will narrow in the months ahead.

### **29. History of cattle feeding profits and losses**

This next slide shows the history of cattle feeding profits and losses over the past decade. The average profit over that period has been a razor thin \$6.50 per head, down from an average profit of 10.50 per head in the past 20 years. Cattle feeders are surely the cowman's best friends.

### **30. Bred Cow Prices**

After an end of cycle dive bred cow prices have rebounded and will likely go higher to reflect their relative scarcity.

### **31and 32 - Basis**

The next two slides simply show the historic basis or price difference between Ontario and Omaha prices in one case and Alberta to Nebraska basis on the other. This

price spread appears to follow a distinct seasonal trend, probably reflecting tighter US supplies in the first and fourth quarters.

### **33. Slaughter Cattle Exports**

As I mentioned at the start, slaughter cattle exports declined significantly in 1999. Of considerable interest, though not shown here is that our beef exports rose about 14% to set a new record. This alone should confirm the futility of the abortive R-Calf effort to curtail fair trade with Canada.

### **34 and 35. Total Meat Production in Canada and the USA**

We move on now to look at total Canadian Meat production which is shown in this stacked bar. I mentioned the potentially rising dollar as being one gathering cloud on the horizon and here is another. Record meat supplies are available and there will be plenty of competition for the meat protein dollar. One sees the same trend in the USA. And in the next two slides 36, and 37 is highlighted the inexorable year over year increases in Broiler production and the strong advances in pork production.

### **38. Beef Demand in 1999**

At last our analysts at CANFAX pulled it all together with a slide entitled "Better beef demand in 1999." You can see for yourself the bases for this premise and almost certainly there was improved demand in the US.

### **39. Domestic Disappearance**

On this side of the border the official figures are not yet in but it appears improbable that domestic disappearance increased. The slide I am showing you was prepared on preliminary figures but recent data suggests that that upward tick for 1999 may be plus 3%. Prices did improve moderately and consumption appears also to have risen. Maybe we have arrested the long slide in demand but we aren't out of the woods by any means. This chart again illustrates the fact that we export slightly more than half of our total production.

### **40 to 44. Growth in Exports**

These next three slides show the steady and strong growth in cattle and beef exports both in tonnage and in dollars. Our national herd is about the 11<sup>th</sup> largest in the world but as a nation we are the 4<sup>th</sup> largest exporter.

### **45. Exports Beyond the USA**

Packers and the Canadian Beef Export Federation are hard at work trying to diversify our beef markets and this slide shows a pretty impressive performance in 1999 over 1998. A sharp-eyed observer will note however that the Y axis was reduced 1 log compared to the charts showing exports to the USA. We continue to send about 95% of total exports to the USA. It is important to seek to diversify our markets and thus to reduce our dependency on the United States as our main outlet. It is equally important to be realistic about the rate at which we can diversify our markets.

### **46 Source of Imports.**

Just a quick look before I wrap up on the source of our beef imports. They are, predictably mainly from the USA, Australia and New Zealand

#### 47 and 48 Summing Up The Outlook

I would just add to what appears on the slide that it is vitally important that we appreciate what has transpired in this industry over the past decade. Our industry has expanded rapidly and now has a major export dimension. Opportunity comes wrapped up in new risks and challenges. We need to secure that market access with a high quality safe and wholesome product produced in a free unsubsidized market and traded aggressively and fairly. I have great confidence that today's producers and their industry leaders will succeed.

#### Price Outlook

I am now back to my own resources and these concluding remarks on price prospects are my own and not to be laid at the doorstep of CANFAX. For many many years I was called upon to analyze the cattle industry and offer price forecasts. I can't ever remember being impressively correct. Gradually we have learned that forecasting prices is a mugs game. What we all became better at was analyzing general trends and that is what I have tried to do today.

But I think some general comments should be made as regards price prospects.

Three or four times in my career I have found myself saying that, '*This is about as good as it gets*'. That was the appropriate comment in 1973, and again in 1979. I didn't get a chance to utter those words again until 1993 and I think they apply again today in a somewhat muted form. Note, if you will, that 1973 was the last years of the halcyon days of demand pull when real consumer incomes were rising as was beef demand. 1978/79 were the years of rapid price recovery after the disastrous sell off and beef glut from 1975 to 1977. In 1993 a low \$C, rapidly increasing exports to the USA and a slight reduction in supply associated with rapid herd expansion lent brief strength to the market. But throughout the entire period 1979 to 1998 beef demand was declining as this last slide clearly shows.

What then were the factors that led to the 'satisfactory' prices of 1999? In fact fed cattle prices in 1999 averaged \$3.00/cwt *lower* than they were in 1993 and on top of that the 1993 prices were based on a \$C that ranged between US \$0.75 and \$0.80. The proper comparison is to note that average Calgary prices expressed in US dollars were \$71.40 in 1993 and \$60.40 in 1999. (1993 - 92.20 x 0.775 = 71.45) (1999 - 89.50 x 0.675 = 61.41)

So I would say that most of the euphoria in 1999 had to do with the record high replacement prices, which as you know, took their cue from very low feed grain prices and a weak Canadian dollar. If these record high replacement prices do not stimulate another cycle of herd expansion I will be very much mistaken.

So the single word I would chose to describe the industry today is 'vulnerable'. In the body of my talk I mentioned a few clouds on the horizon. Let me recap them.

**Supply** – Has been reduced but not materially. Further supply reductions are forecast but the supply reductions in the USA will not be large.

**Demand** - Some see evidence of a modest improvement but any recovery has been small and needs much nurturing. We are not out of the woods on demand by a long shot.

**Export Vulnerability** – We won but R-Calf and their ilk haven't gone away and as we speak the dumping finding is under appeal. Our huge dependency on continued access to the US market needs no further explanation.

**Interest rates** – Poised to move at least moderately higher, and have during the drafting of these remarks.

**SC – Ditto.**

In sum the price of replacement cattle, the engine that drives the cattle cycle may already have passed their peak.

These are five pretty ominous clouds that we must keep an eye on over the next year or two.

*The only comfort the industry can take from this is that, in matters related to the beef industry and in order to temper the unbounded enthusiasm of most cattlemen most of the time, I have always been 'the eternal pessimist'.*

## **Projected Cattle Marketings for 2000 and 2001.**

By Chas. Gracey

(This data is the rationale for the projected marketings in the foregoing)

Jan 11 2000

I have developed a technique for equating steer and heifer marketings to the size of the breeding herd as reported in the July 1 Statistics Canada estimates. July cow herd numbers are much more useful than Jan. 1 numbers because the official definition of a beef cow is, 'A female that has calved'. Because of the dominance of spring calving in Canada all of the cows that calved in the spring will be nursing their calves on July 1. The assumption upon which my analysis rests is that 67% of the steers and heifers marketed in a particular year were born the year previous and 33 % were born the year previous to that. A more detailed explanation can be provided for this but the assumption

is predicated principally on the fact that spring calving dominates in the national beef herd. Thus on Jan 1 1999 the oldest steer or heifer, if from the 1997 calf crop will already be 19 months old if born as late as May 31 or 22 months old if born as early as Feb. 28. Since it is apparent that virtually all fed cattle now reach market before they reach 24 months of age the 1997 calf crop would have to be through the market no later than the end of May 1999 and most much sooner. Now, recognizing that very few fed cattle are marketed when younger than 12 months or older than 24 months we have a window of twelve months. If marketed on an equal basis that works out to 8.3% per month. We know that this is not so, that marketings peak at about the 15 to 20 months of age. Hence the approximation that not more than one third of the marketings in any year were born two years earlier.

**Cow and Bull marketings are equated to current herd size.**

**July 1 Cow herd (,000 head)**

- 1996 - 5982.8
- 1997 - 5913.7
- 1998 - 5819.1
- 1999 - 5753.5
- 2000 - 5700.0 Est.
- 2001 - 5700.0 Est. Note: With heifer and cow marketings stabilizing in 2000 I expect the cow herd will stabilize and perhaps bottom out at 5.7 million cows in both 2000 and 2001.

The estimate of future herd size is important and requires explanation. A good indicator of the rate of herd growth or contraction is the sex ratio in the annual marketings. In 1996 the ratio was 1.05 females to 1 male and the 1997 cow herd declined 1.15%. In 1997 the sex ratio increased to 1.08: 1 and the 1998 cow herd declined 1.7%. In 1998 the sex ratio was again 1.08 and the cow herd declined 1.1%. In 1999 the sex ratio was still high at 1.07:1 so I forecast a decline as at July 1 2000 of another 1% which will reduce the cow herd to just under 5.7 million

**Steer Marketings.** (1999 - 1978.0 Thousand head) Over the period 1970 to 1998 we have marketed an average of 34 steers per 100 cows. This average has been impressively stable with a very small standard deviation of + or - 1.3 head but the annual figure has been rising steadily as the dairy herd has declined. Since 1995 the figure has exceeded 35 but fell to 33.8 for 1999. For 2000 through 2001 I estimate the ratio and remain at 0.34.

For 2000       $0.34((0.33 \times 5819.1) + (0.67 \times 5753.5)) = 1963.6$

• For 2001       $0.34((0.33 \times 5753.5) + (0.67 \times 5700.0)) = 1944.0$

**Heifer Marketings** -(1999 - 1507.4 Thousand head). These have averaged 19.5 head per 100 breeding cows but the figure is much more variable and cyclically influenced. The maximum figure yet recorded was 25.9 and occurred in 1998. It remained very high in 1999 at 25.8. I now expect this ratio to drop about half way back to its long term average in 2000 which would be about 22.6. For 2001 I predict the retreat to 19.5 will be complete and could potentially lower if herd expansion commences.

- For 2000  $0.226 ((0.33 \times 5819.1) + (0.67 \times 5753.5)) = 1305.4$
- For 2001  $0.195 ((0.33 \times 5753.5) + (0.67 \times 5700.0)) = 1114.9$

**Cows** (1999 – 701 Thousand head) The long term average for cow marketings has been 15% of the current breeding herd. In 1999 this rate dropped to a nearly unprecedented 10.8%. For 2000 and 2001 I am forecasting this figure to remain close to 12.

- Thus for 2000  $0.12 \times 5700.0 = 684.0$
- And for 2001  $0.12 \times 5700.0 = 684.0$

**Bulls** - (1999 – 77.0 Thousand head) Bull numbers are not large and are somewhat variable. However for forecasting total supplies the variations are hardly significant and for that reason I just use a constant figure of 1.5%.

- Thus for 2000,  $0.015 \times 5700.0 = 85.5$
- And for 2001,  $0.015 \times 5700.0 = 85.5$

## TOTALS

- 1999 - 4263.0
- 2000 - 4039.5 - 5.2%
- 2001 - 3828.4 - 5.2%

The projected decline in 2000 is rather dramatic and surprising but it arises primarily out of projected sharp declines in heifer marketings from current unsustainable levels. In fact heifer marketings are the main uncertainty. One can place a high level of confidence in the estimates of steer marketings and a moderately high level of confidence in forecasts of cow marketings. However heifer marketings in the year 2000 will depend heavily on the strength in replacement prices in the fall of 1999. Strong prices will tend to encourage herd rebuilding and heifer marketings will decline. Conversely weak or soft prices may well lead to a higher sell off of heifers which would tend to increase heifer slaughter in 2000 and 2001.

What can be confirmed with confidence is that the cyclical peak in cattle marketings may already have passed through the market in 1998 and, if not, will definitely have done so in 1999. As noted earlier the current cycle had an uncharacteristically flat and extended peak in terms of cow numbers and the supply peak follows the same pattern. The only thing that can prevent a significant downturn in marketings in the year 2000, barring a natural catastrophe such as wide spread and serious drought, would be an adverse ruling or other measures that would deny Canadian cattle and beef access to the US market. Such an event, or series of events, could force herd liquidations on a massive scale reminiscent of 1976 and that of course would swell supplies potentially above 1998 levels.

CAG



**GrainWorld**

## **Pork Outlook**

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**Presented By:**

**Bill Oakley  
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**Presented to:**

**Grain World 2000  
Winnipeg, Manitoba  
February 29, 2000**

## Pork Outlook



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# Agenda

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## Introduction

- Rapid Pace of Change
- Learning Process

## Changing Pork Industry

- Lesson From the Cattle Industry
- Do Hogs Fit into Prairie Agriculture
- Processor Concentration
- Retailer Concentration
- Producer Concentration



# Agenda

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## Demand

- US Demand For Meat
- Canadian Demand For Meat
- World Demand For Pork

## Supply

- US Supply of Hogs
- Canadian Supply of Hogs
- Western Canadian Supply of Hogs

## Price Outlook

- Inputs
- Hogs



## Change: Points to Ponder

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1. There is more Computing Power in today's new car than there was in the Apollo Spacecraft
2. The cost of computing power has come down 10 MILLION FOLD since 1981
3. Intel expects to layer the microprocessor with 1 BILLION transistors by 2010



## Change: Points to Ponder

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4. 1 Strand of fiber optic cable can transmit in less than 1 second every issue of the Wall Street Journal ever published
5. 1 Billion People will be on the Internet in 5 years
6. Electronic commerce will go from U\$11 Billion to U\$123 Billion in 2001



## Change: Points to Ponder

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7. It is now predicted that scientists will have the capability of being able to map every gene by 2005, leading to a new era in the treatment of disease.



# The Learning Process

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<u>Class/Stage</u>	<u>Reaction Characteristics</u>
1	Duh?
2	<p><b>Officially the processing sector of</b> <b>the livestock industry has not been learning</b></p> <p><b>Suffice to say, historically the</b> <b>livestock industry has not been learning</b></p>
4	Ah Ha

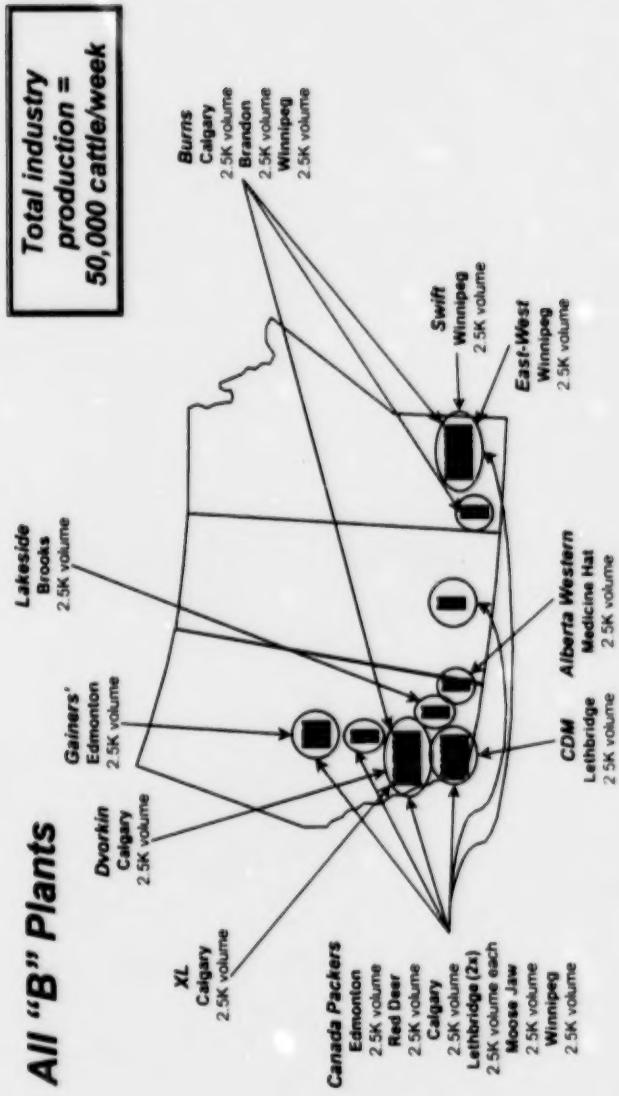
**- no learning sector of**  
**the processing**  
**reaction withers**  
**and withers**  
**reaction with**  
**moderate learning**

**- advanced**  
**learning**



# Changing Industry: Lessons from the Cattle Industry

## The Beef Industry: Barometer 1980's



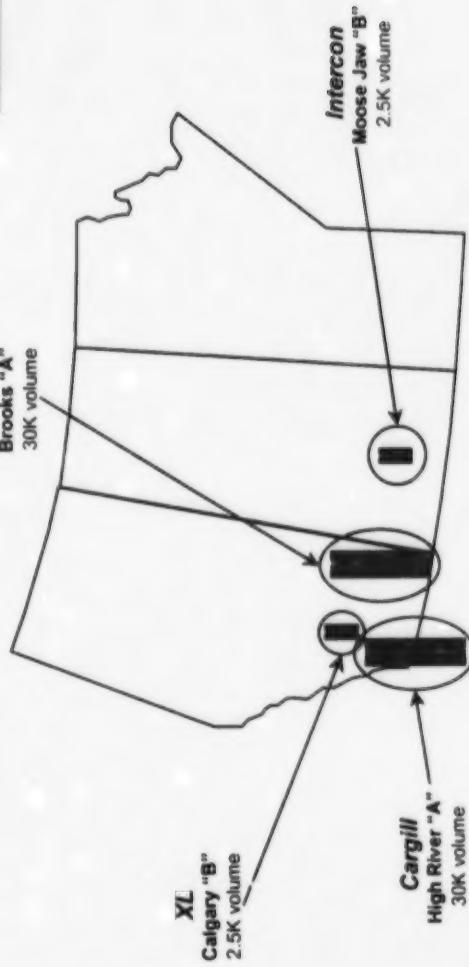


# Changing Industry: Lessons from the Cattle Industry

## The Beef Industry: Barometer 1990's

### Both "A" & "B" Plants

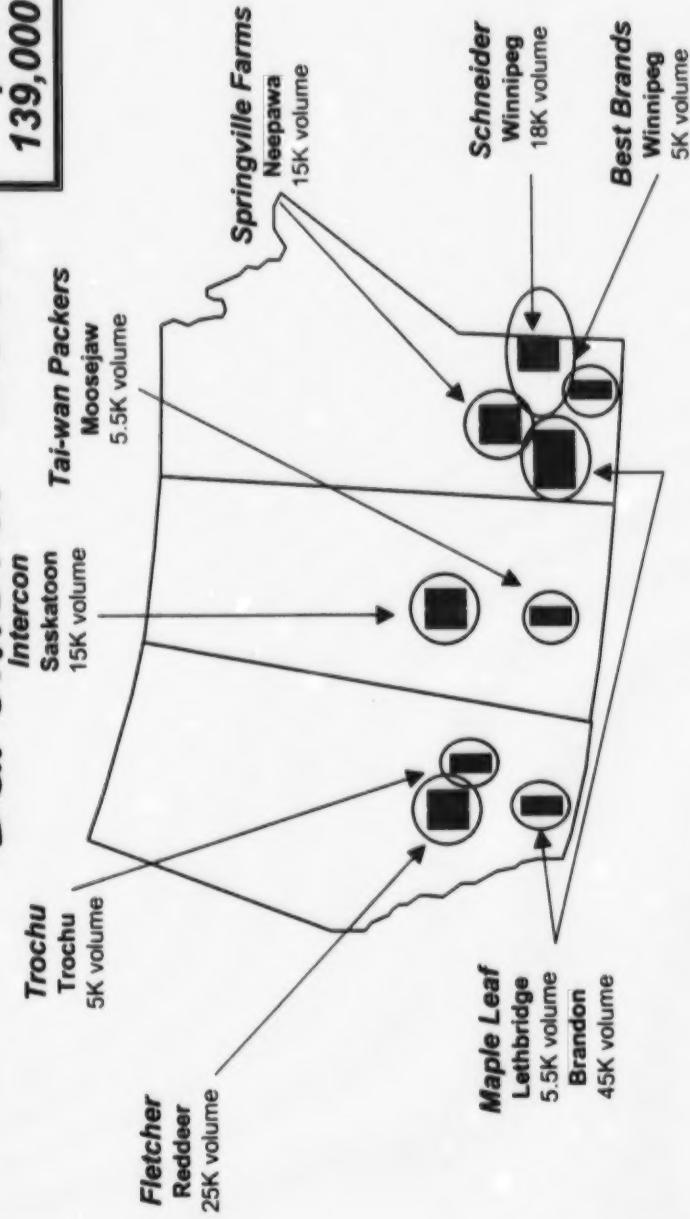
**Total industry production =  
65,000 cattle/week**



# Changing Industry: Lessons from the Cattle Industry Current Western Pork

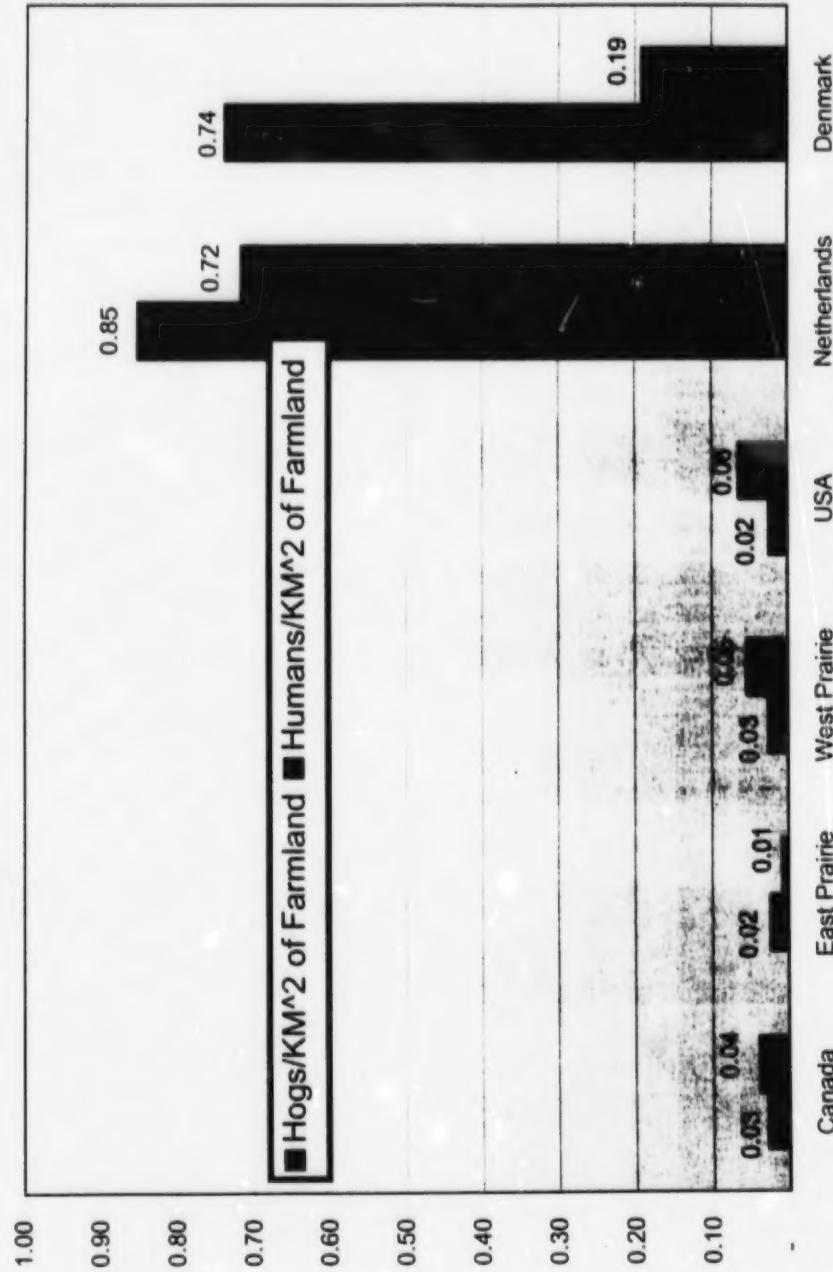
## The Hog Industry Barometer 2000

Total industry  
production =  
139,000 hogs/week





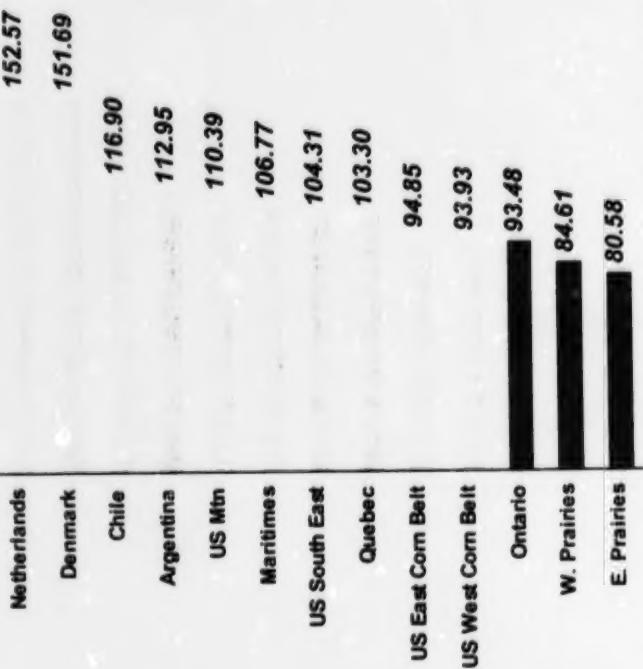
# Changing Industry: Do Hogs Fit Into Prairie Agriculture





# Changing Industry: Do Hogs Fit Into Prairie Agriculture

## Comparative Hog-Raising Costs (1998)



## Key Drivers

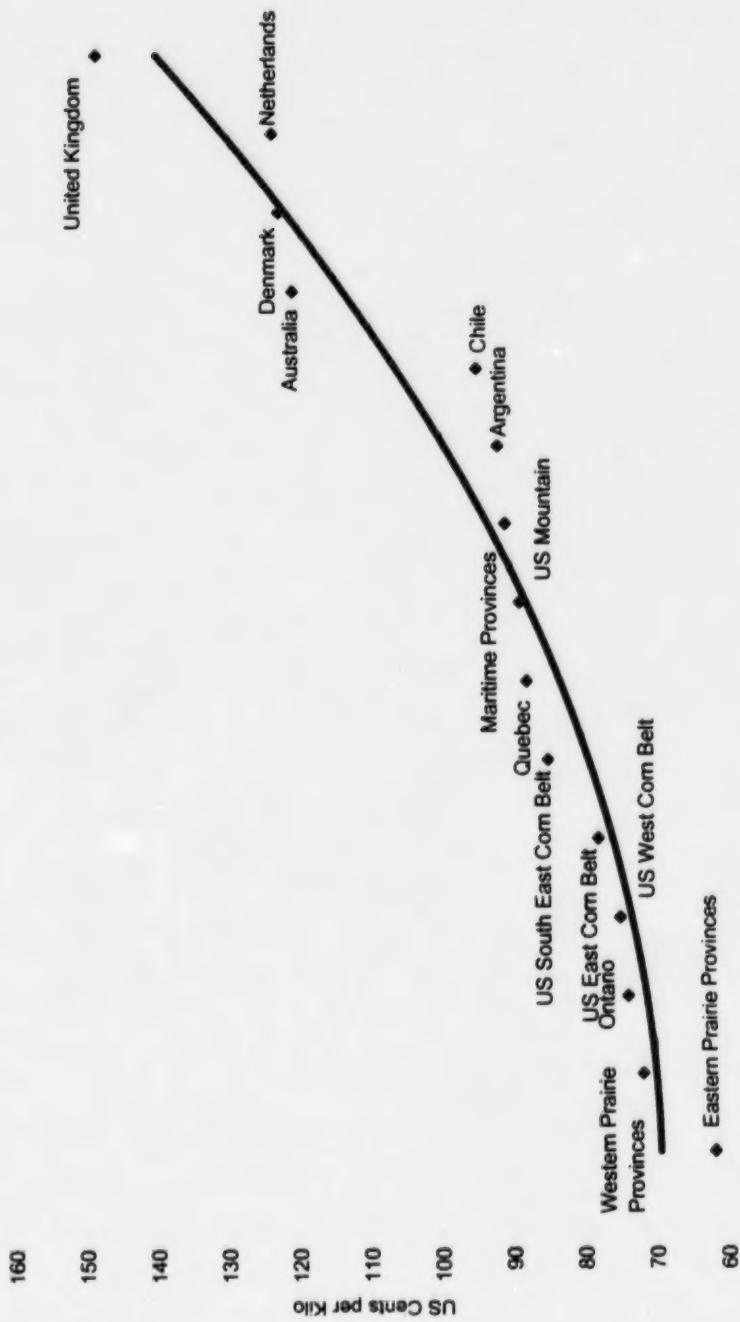
- Cheap feed grains
- Available land and water
- Access to good genetics
- Good public infrastructure
- Solid government support
- Excellent management skills
- Well developed capital market

Source: George Morris Centre, Oct. 24/97; Cost Competitiveness of the Canadian Pork Processing Industry



# Changing Industry: Do Hogs Fit Into Prairie Agriculture

Global Hog Production Cost Curve





# Changing Industry: Processor Concentration (US)

## Average Daily Hog Slaughter - Top 4 Processors

1991

	#	Share of Total	#	Share of Total
BP	66,900	19.0%	SmithField	74,300
ConAgra	45,800	13.0%	BP	72,000
Homel	35,000	9.9%	ConAgra	39,400
Morell	21,000	6.0%	Cargill	38,700
<b>Total Top 4 Processors</b>	<b>168,700</b>	<b>47.9%</b>	<b>Total Top 4 Processors</b>	<b>224,400</b>
Total Market	352,000		Total Market	383,970
				58.6%

Source: National Pork Producers Council



# Changing Industry: Processor Concentration (Cdn.)

## Average Daily Hog Slaughter - Top 4 Processors

1993

2000E

#	Share of Total	#	Share of Total		
Olymel	10,200	17.4%	Maple Leaf	28,100	32.4%
Maple Leaf	10,000	17.1%	Olymel	14,600	16.8%
Fletcher's	5,000	8.6%	Smithfield	8,500	9.8%
Schneiders	4,800	8.2%	Fletcher's	8,000	9.2%
<b>Total Top 4 Processors</b>		<b>51.3%</b>			
<b>Total Market</b>	<b>58,470</b>				
			<b>68.2%</b>		
			<b>Total Market</b>	<b>86,740</b>	

Source: Statistics Canada; Maple Leaf Pork internal analysis



# Changing Industry: Processor Concentration (why)

*Relative Unit Cost Savings vs. Plant Scale*

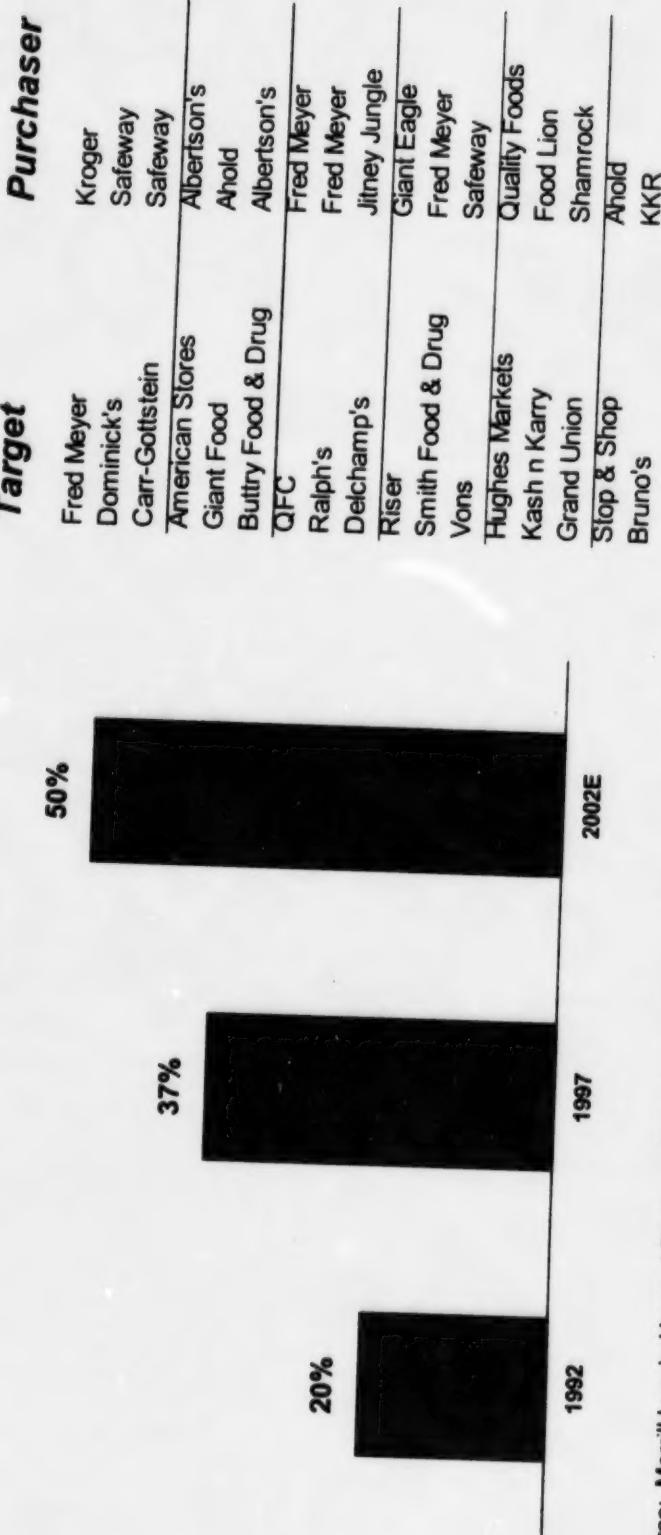


Source: George Morris Centre, Oct.24/97; Cost Competitiveness of the Canadian Pork Processing Industry



# Changing Industry: Retailer Concentration (US)

*US Top 10 Food Retailers Share of Market  
(1992 - 2002E)*



Source: Merrill Lynch; Harvard Business School: Food Business News



# Changing Industry: Retailer Concentration (Cdn)

*National Market Share of Top 3 Canadian Grocery Retailers*  
(1984 - 1998)



Source: NPD; Conquest, McKinsey & Company

# Changing Industry: Producer Concentration (US)



Source: USDA Economic Research Service





# Changing Industry: Producer Concentration (US)

## Top 15 US Hog Producers

Producer	1994		1999		
	Sows (000)	Share (%)	Producer	Sows (000)	Share (%)
1. Murphy Family Farms	180	2.8%	1. Smithfield - Carroll's	348	6.7%
2. Carroll's Foods	110	1.7%	2. Murphy Family Farms	337	6.5%
3. Premium Standard Farms	99	1.5%	3. Continental Grain	162	3.1%
4. Tyson Foods	95	1.5%	4. Seaboard Corp.	125	2.4%
5. Cargill	77	1.2%	5. Prestage Farms	125	2.4%
6. Prestage Farms	74	1.1%	6. Tyson Foods	124	2.4%
7. Smithfield Foods	66	1.0%	7. Cargill	120	2.4%
8. DeKalb Swine Breeders	65	1.0%	8. DeKalb Swine Breeders	97	2.3%
9. National Farms	34	0.5%	9. Iowa Select Farms	90	1.9%
10. Goldsboro Hog Farm	30	0.5%	10. Purina Mills (Koch)	75	1.7%
11. Sand Systems	27	0.4%	11. Goldsboro Hog Farm	64	1.4%
12. Continental Grain	20	0.3%	12. The Hamor Company	64	1.2%
13. Louis Dreyfus Corp.	20	0.3%	13. Land O' Lakes	64	1.2%
14. Seaboard Corp.	20	0.3%	14. Heartland Pork Enterprises	61	1.2%
15. Hastings Pork	18	0.3%	15. National Farms	49	1.0%
<b>Total Top 15 Producers</b>	<b>935</b>	<b>14.4%</b>	<b>Total Top 15 Producers</b>	<b>1,905</b>	<b>39.5%</b>
<b>Total Market</b>	<b>6,429</b>		<b>Total Market</b>	<b>5,194</b>	

Source: Successful Farming, 1998; Smithfield Foods

Source: Successful Farming, 1994



# Changing Industry: Producer Concentration (Cdn)

## Top 15 Canadian Hog Producers

Producer	1994		1999		Sows (000)	Share (%)	Sows (000)	Share (%)
	Sows (000)	Share (%)	Producer	Sows (000)				
1. Hutterite Colonies	40	6.3	1. Elite	50	6.8			
2. Menard	15	2.3	2. Hutterite Colonies	47	6.4			
3. TPC	7	1.1	3. Menard	30	4.1			
4. Côté Paquette	5	0.8	4. Puratone	20	2.7			
5. Premium Pig	5	0.8	5. Jansen	15	2.0			
6. Robitaille	5	0.8	6. TPC	13	1.8			
7. Fraser Valley	5	0.8	7. Quadra	12	1.6			
8. Elite Swine	3	0.5	8. ShurGain Québec	12	1.6			
9. Cargill	3	0.5	9. QSS Feed-Rite	10	1.4			
10. Sunterra Farms	3	0.5	10. Premium Pig	10	1.4			
Total Top 10 Producers	91	14.2%	Total Top 10 Producers	193	29.8%			
Total Market	638.7		Total Market	732.4				

Source: Statistics Canada

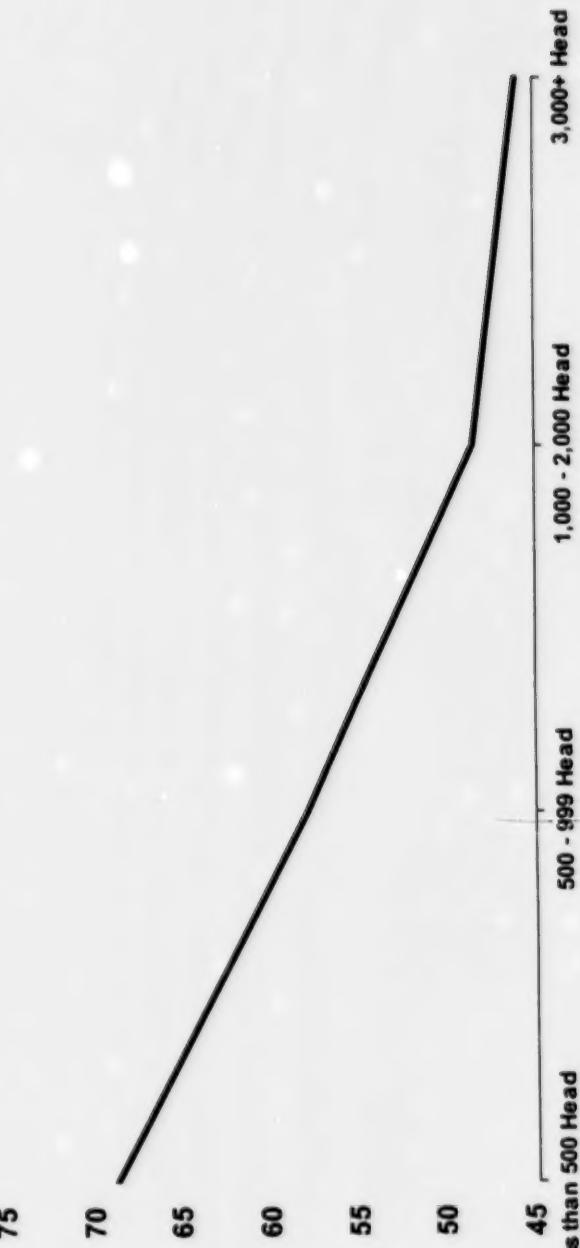


## Changing Industry: Producer Concentration (US) (Why)

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*Average Hog Production Costs in the US*  
(\$/Hundredweight)

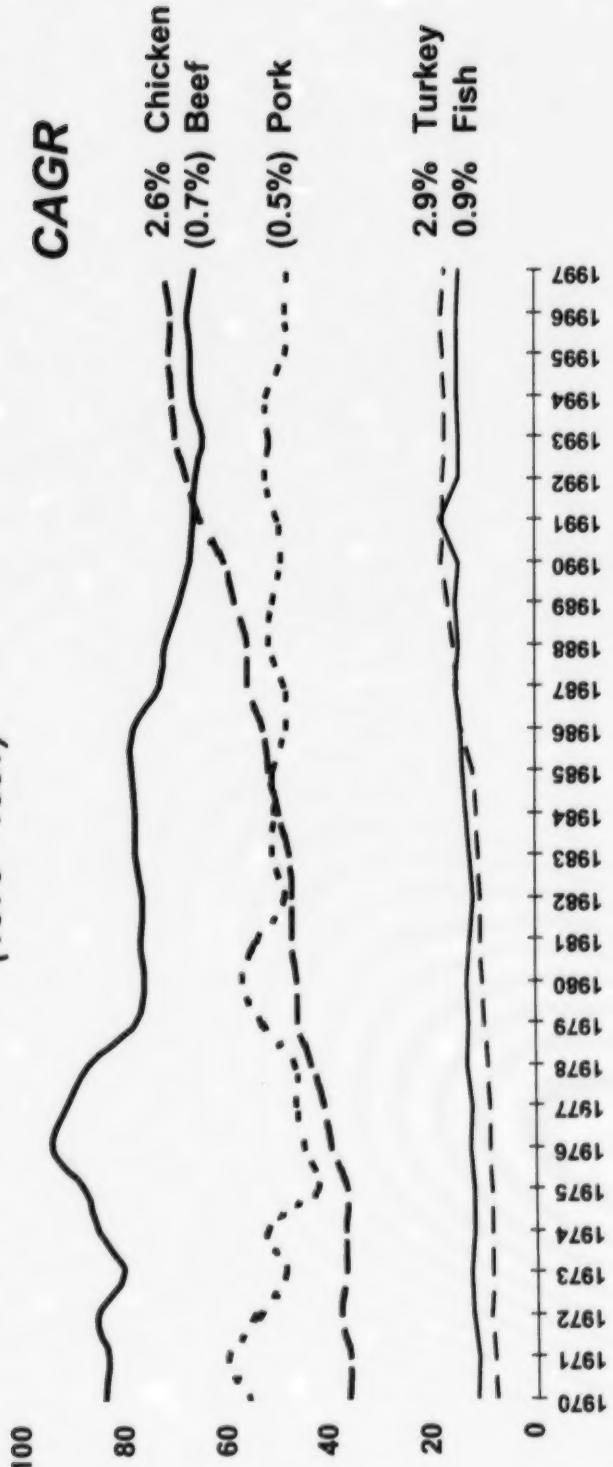


Source: USDA Economic Research Service

# Demand for Meat: US



*Per Capita Meat Consumption  
(1970 - 1997)*

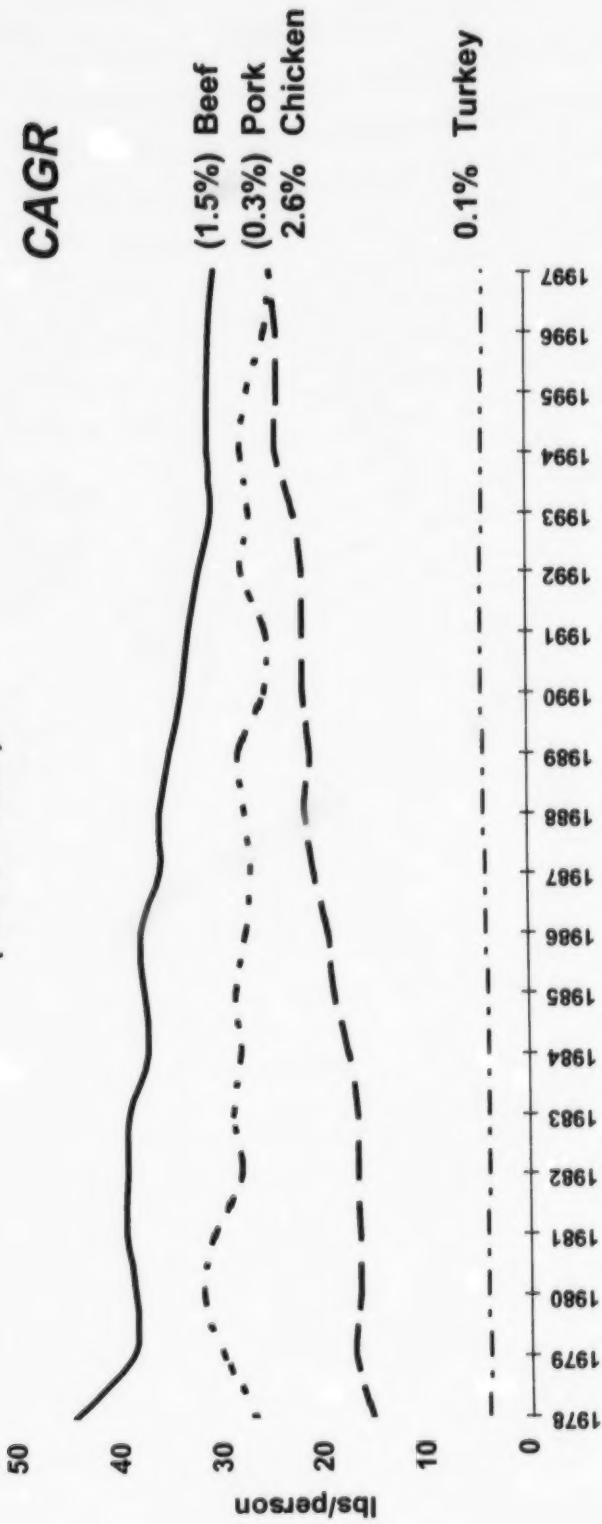


Source: USDA



# Demand for Meat: Canada

*Per Capita Meat Consumption in Canada  
(1978 - 1997)*



Source: Statistics Canada

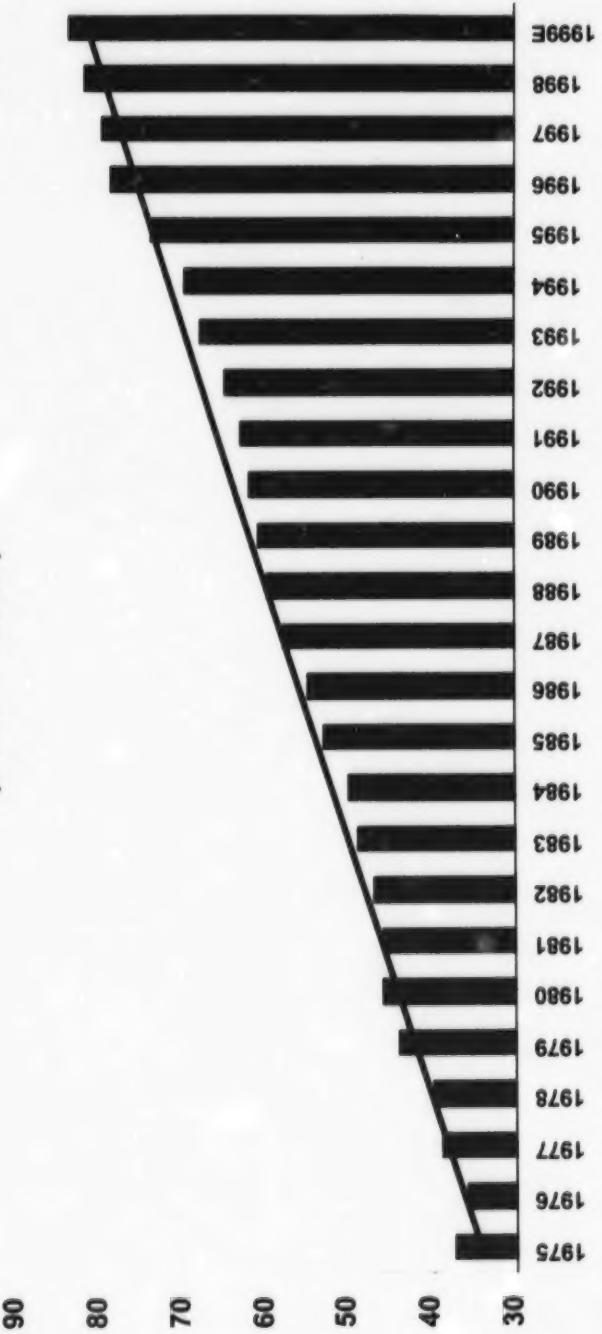
# Demand For Pork: World

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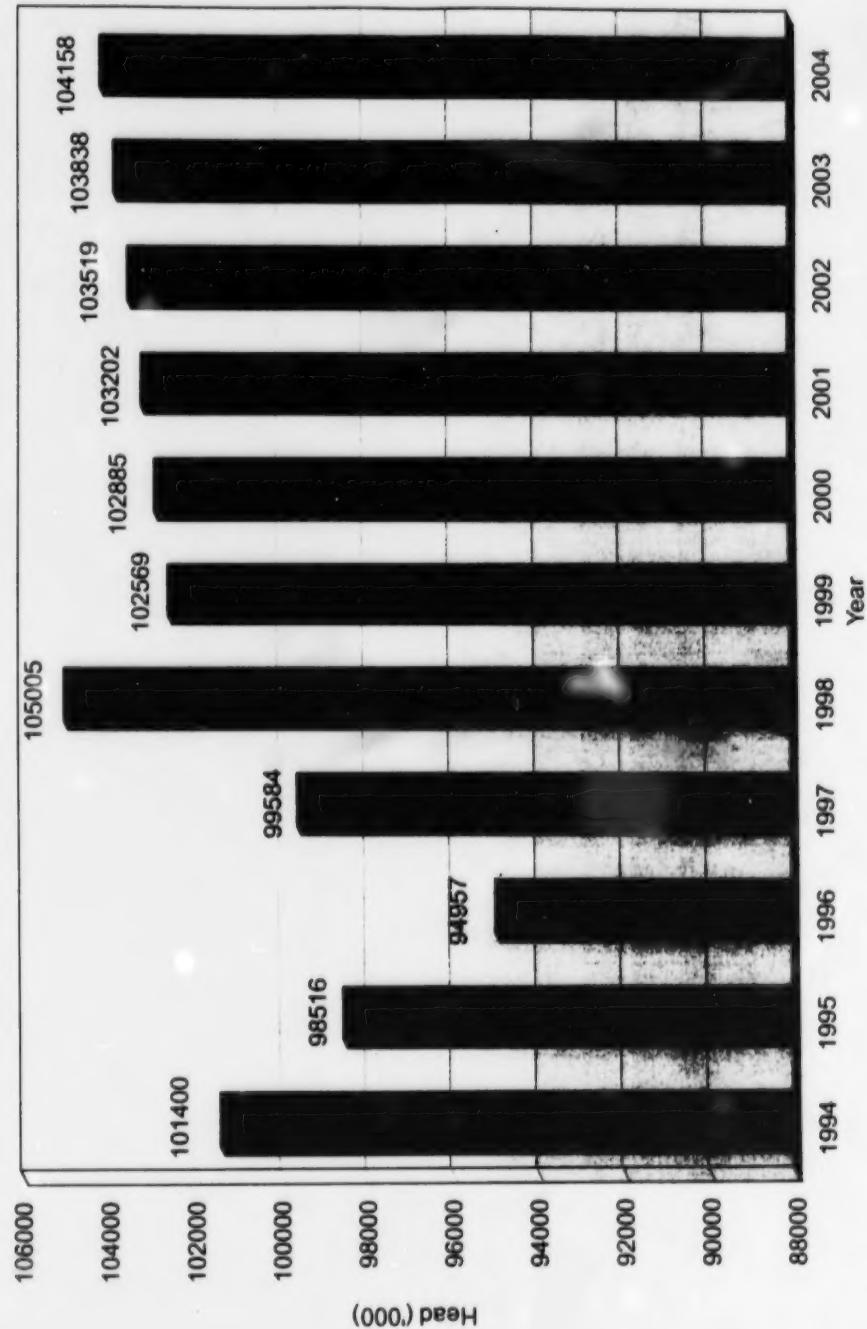


*Global Pork Consumption*  
(1975 - 1999E)



Source: USDA Foreign Agricultural Service

# Hog Supply: US



# Hog Supply: Canadian



1990

1991

1992

1993

1994

1995

1996

1997

1998

1999

2000

2001

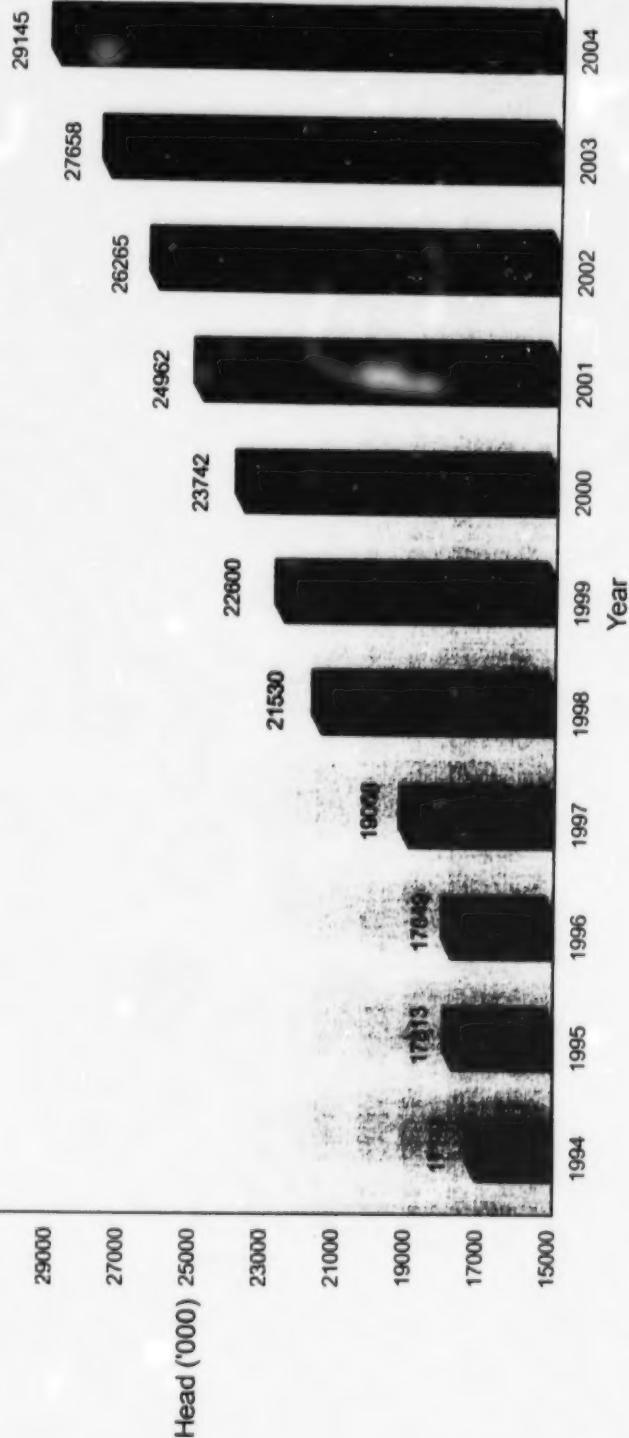
2002

2003

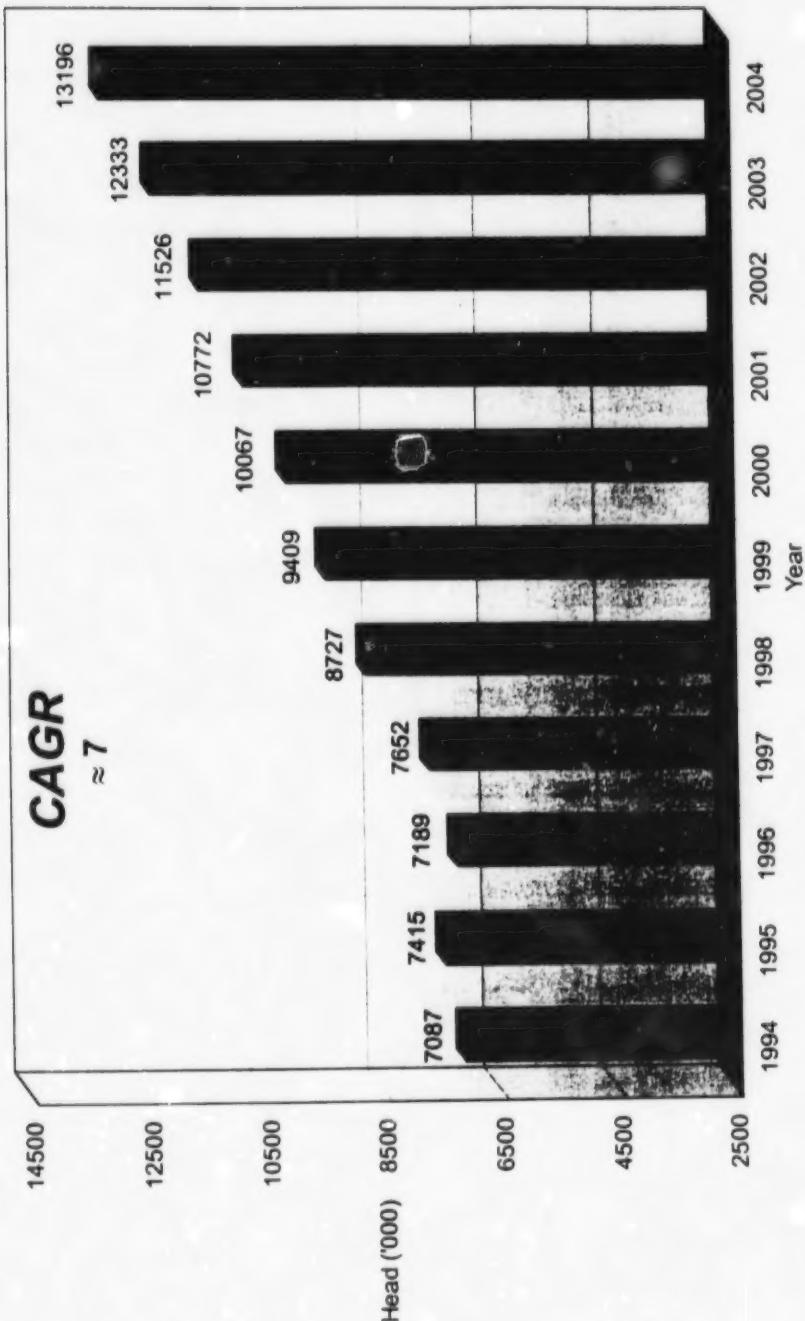
2004

CAGR

≈ 5



# Hog Supply: W. Canada

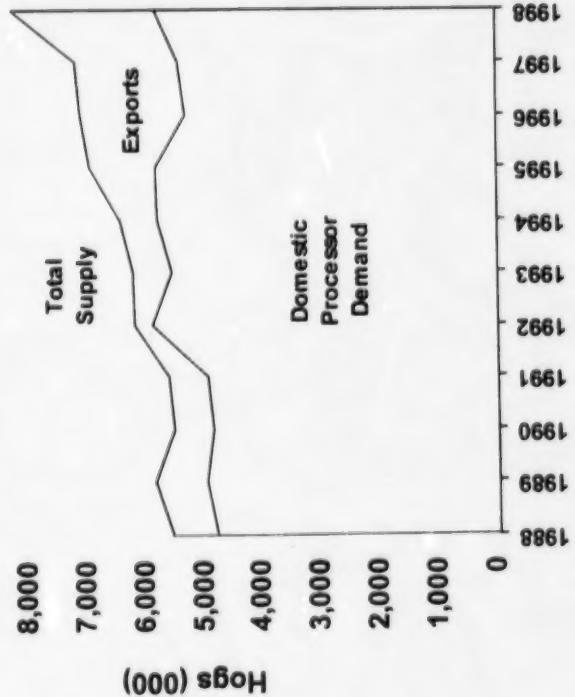




# Hog Supply versus Hog Demand

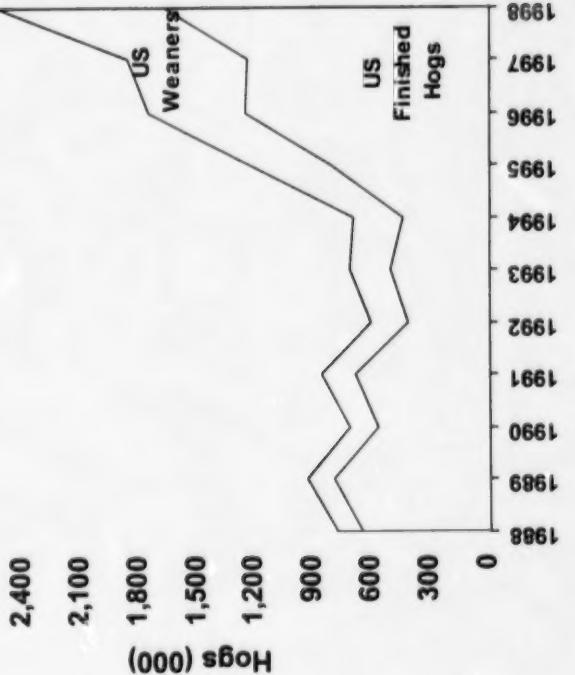
## Western Canadian Hog Supply & Demand (1988-1998)

9,000  
8,000  
7,000  
6,000  
5,000  
4,000  
3,000  
2,000  
1,000  
0



## Western Canadian Hog Exports (1988-1998)

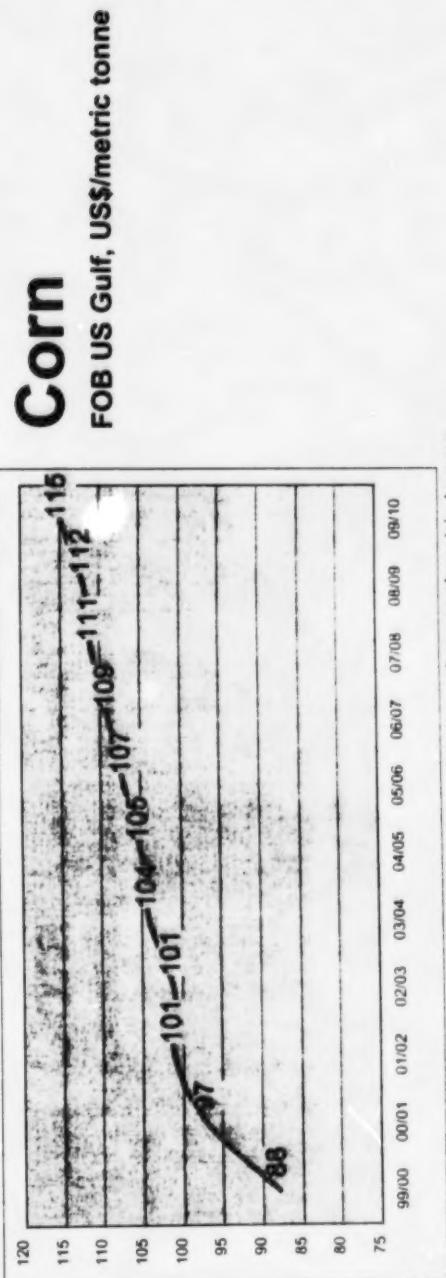
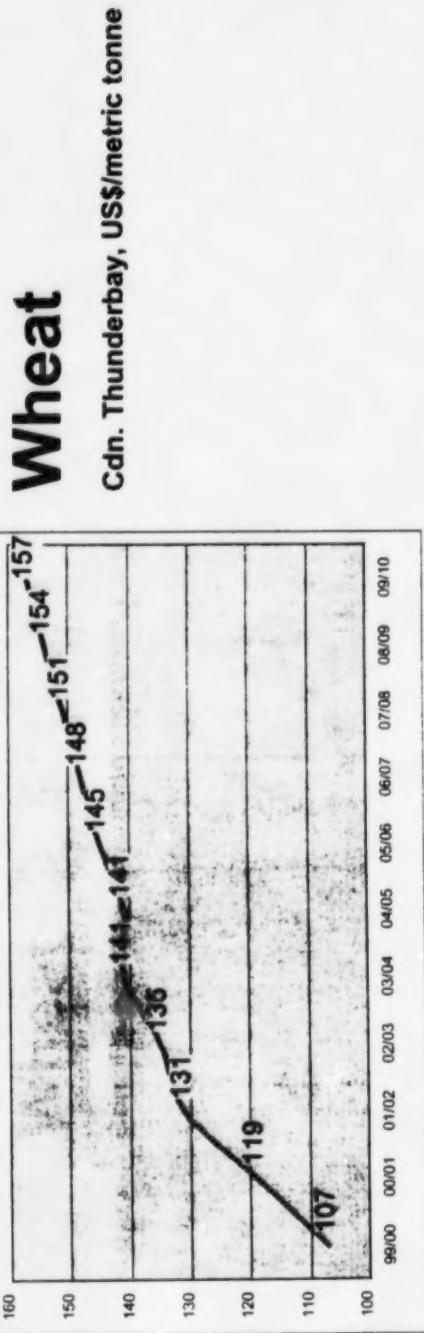
2,700  
2,400  
2,100  
1,800  
1,500  
1,200  
900  
600  
300  
0



Source: Statistics Canada



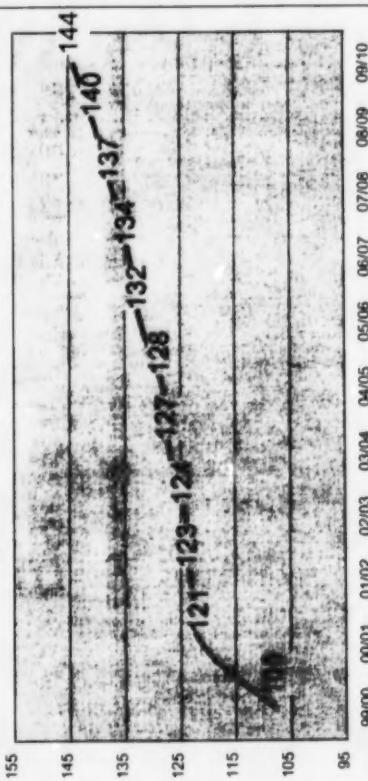
# Price Outlook: Commodity Base Price Projections / Risks



Source: Food and Agricultural Policy Research Institute, thousand metric tonnes



# Price Outlook: Commodity Base Price Projections / Risks



## Barley

FOB Pacific Northwest, US\$/metric tonne

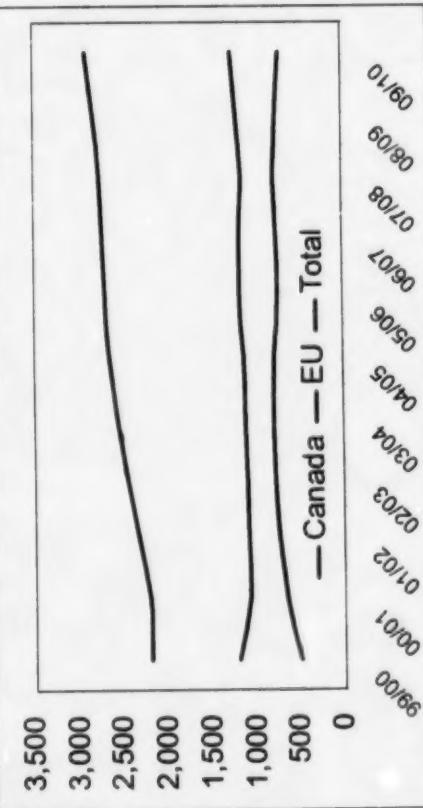


Source: Food and Agricultural Policy Research Institute, thousand metric tonnes

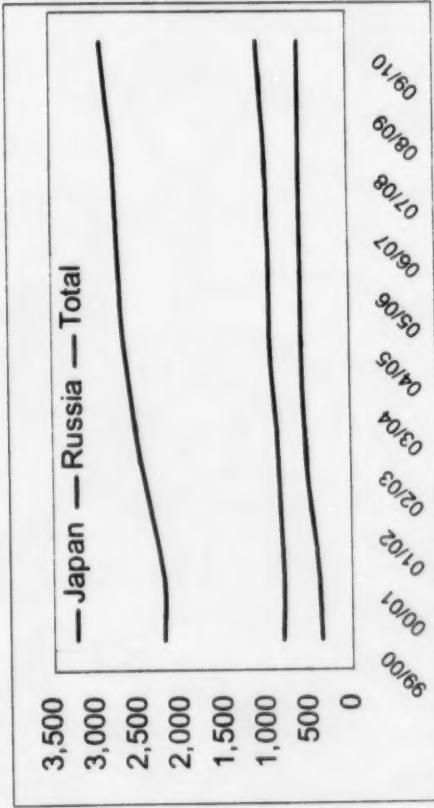


# Price Outlook: Commodity Base Price Projections / Risks

## Net Exporters

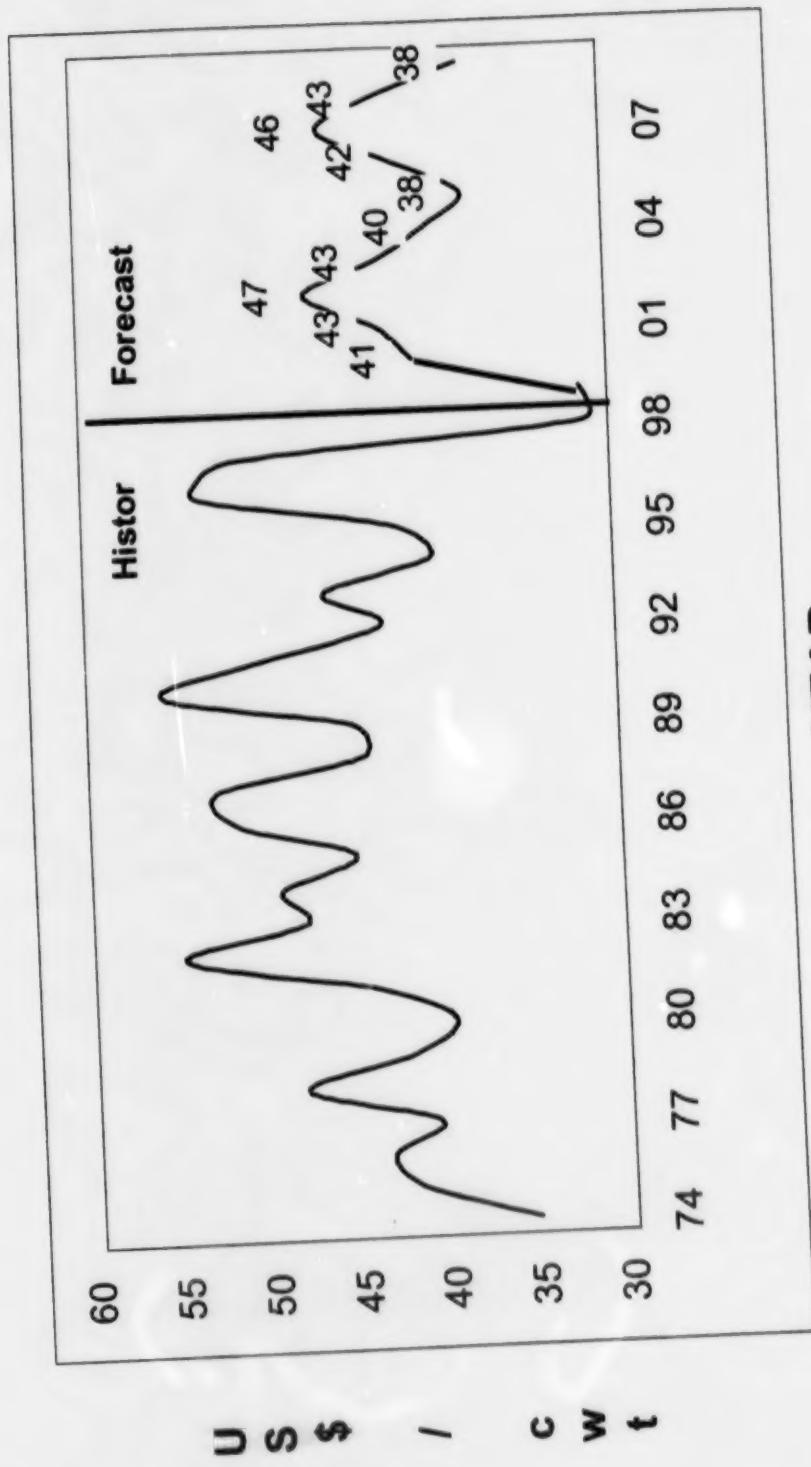


## Net Importers



Source: Food and Agricultural Policy Research Institute, thousand metric tonnes

# Price Outlook: Hogs



**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
		James Richardson International Ltd.	Winnipeg	MB
Alker	John	Masterfeeds	Edmonton	AB
Altman	Ira	University of Saskatchewan	Saskatoon	SK
Anderson	Bill	Aventis CropScience Canada Co.	Saskatoon	SK
Anderson	Brian	Manitoba Agriculture and Food	Dauphin	MB
Anderson	Joan	Canadian Wheat Board	Winnipeg	MB
Anderson	Laura	Canadian Grain Commission	Winnipeg	MB
Arason	Greg	Canadian Wheat Board	Winnipeg	MB
Arcand	Alan	Conference Board of Canada	Ottawa	ON
Archibald	George	United Grain Growers Limited	Winnipeg	MB
Arnott	David	BCR Marine	North Vancouver	BC
Atkinson	Pat	Transport Canada	Winnipeg	MB
Backman	Aaron	Canadian Wheat Board	Winnipeg	MB
Baldwin	Randy	Kelly Associates	St. Malo	MB
Bales	Keith	Montana Stock Growers Assoc.		
Barth	Leland	North Dakota Wheat Commission	Bismarck	ND
Beaudin	Vic	Penta Farms Ltd.	St. Eustache	MB
Beckman	Chris	Agriculture & Agri-Food Canada	Winnipeg	MB
Benning	Scott	Weyburn Inland Terminal Ltd.	Weyburn	SK

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Bernardin	Noëlline	Caisse Populaire D'Elie Ltee.	Elie	MB
Bjarnason	Harold	University of Manitoba	Winnipeg	MB
Bloss	Steve	PCTS	Winnipeg	MB
Bond	Ahmed	Ralston Purina Canada	Mississauga	ON
Bond	Gary	CN Rail	Winnipeg	MB
Bond	Stuart	Veterinary Infectious Disease Organization	Saskatoon	SK
Boucher	Bernie	Omnitrax Canada	Winnipeg	MB
Boyes	David	Canadian Wheat Board	Winnipeg	MB
Bragg	Anna	Ontario Corn Producers' Association	Guelph	ON
Breese	Gail-Ann	Statistics Canada	Winnipeg	MB
Breker	Kris	Wolverine Farms Ltd.	Muenster	SK
Brewin	Derek	University of Saskatchewan	Saskatoon	SK
Brindle	Brenda	Alberta Grain Commission	Edmonton	AB
Bromley	Don	Keystone Agricultural Producers	Winnipeg	MB
Brown	Cam	J.C. Brown Consulting Services	Winnipeg	MB
Brown	Peter	Bank of Montreal	Toronto	ON
Bruch	Keith	N.M. Paterson	Winnipeg	MB
Bruun	Anders		Winnipeg	MB
Buchanan	Brock	Buchanan Trading Inc.	Toronto	ON
Burton	Ron	Grain Workers Union Local 333	Vancouver	BC

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

<b>Surname</b>	<b>Firstname</b>	<b>Organization / Company</b>	<b>City</b>	<b>Province / State</b>
Cahoon	Mathew	United States Department of Agricultural	Ottawa	ON
Campbell	Dave	Manitoba Agriculture	Carman	MB
Carles	Claude	Weyburn Inland Terminal Ltd.	Weyburn	SK
Carlson	Leif	University of Saskatchewan	Saskatoon	SK
Casar	Stan	FIMAT Deriatives	Winnipeg	MB
Catellier	François	Canadian Special Crops Association	Winnipeg	MB
Chapman	Robert	Canadian Wheat Board	Swift Current	SK
Chappellaz	Hubert	La Caisse Populaire de Lourdes	St. Claude	MB
Chase	Darren	Alberta Agriculture, Food and Rural Development	Edmonton	AB
Chatenay	James	Canadian Wheat Board	Red Deer	AB
Chen	Gemai	Dept. of Mathematics & Statistics University of Regina	Regina	SK
Cheney	Quinn	Canadian Consulate General of Minneapolis	Minneapolis	MN
Choquette	Donna	Export Development Corporation	Ottawa	ON
Chorney	Doug	Producer	East Selkirk	MB
Clark	E. Ann	University of Guelph	Wooster	OH
Cobb	Norm	Canadian Wheat Board	Winnipeg	MB
Collins	Michael	Canadian Grain Commission	Winnipeg	MB
Cooper	Ray	Producer	LaPorte	SK
Cornellier	Ann	Department of Finance	Ottawa	ON
Coulombe-Tétrault	Carmen	Canadian Grain Commission	Winnipeg	MB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Crown	Thomas	Anheuser-Busch Companies Inc.	St. Louis	MO
Cule	Monika	University of Saskatchewan	Saskatoon	SK
Davey	Mike	Agricore Cooperative Ltd.	Winnipeg	MB
Davies	Robert	Weyburn Inland Terminal Ltd.	Weyburn	SK
Davis	Barry	Foreign Affairs and International Trade, Canada	Ottawa	ON
Dawson	Dick	Fulcrum Associates	Winnipeg	MB
Dean	John	UGG	Winnipeg	MB
Desaulniers	Andy	Agricore	Fort Saskatchewan	AB
Diamond	Philip	Ralston Purina Canada	Mississauga	ON
Dilse	Frank	North Dakota Wheat Commission	Bismarck	ND
Dobson	Clint	University of Saskatchewan	Saskatoon	SK
Downey	Jim	Secan Association	Saskatoon	SK
Drake	Hugh	Agricore	Elkhorn	MB
Drul	Wayne	United Grain Growers	Oakburn	MB
Dufault	Cyril	CN Rail	Winnipeg	MB
Dumanski	Mark	PFRA - AAFC	Regina	SK
Dupasquier	Bert	Canadian Wheat Board	Winnipeg	MB
Dutka	Charay	Canadian Wheat Board	Winnipeg	MB
Duvenaud	John	Duvenaud Associates	Winnipeg	MB
Dyck	Lloyd	Brett Young Seeds Ltd.	Winnipeg	MB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

<b>Surname</b>	<b>Firstname</b>	<b>Organization / Company</b>	<b>City</b>	<b>Province / State</b>
Dyck	Raymond	Mohawk Canada Ltd.	Minnedosa	MB
Elliott	Gordy	Farmers Commodities Corporation (FCC)	Eden Prairie	MN
Elliott	Ray	CanAmara Foods	Russell	MB
Enns	Arthur	Western Canadian Wheat Growers Association	Morris	MB
Enns	John	Brett Young Seeds Ltd.	Winnipeg	MB
Flaten	Murray	Manitoba Agriculture and Food	Winnipeg	MB
Fossay	Chuck	Keystone Agricultural Producers	Starbuck	MB
Foxcroft	Ken	TD Securities Inc.	Toronto	ON
Fridfinnson	Eric	Agricore	Winnipeg	MB
Friesen	Bob	Canadian Federation of Agriculture	Ottawa	ON
Friesen	Holly	Angus Reid Group	Winnipeg	MB
Fritz	Roger	Rahr Malting Co.	Shakopee	MN
Gamby	George	WESTEEL, A Division of Jenisys Engineered Products	Winnipeg	MB
Gauthier	Cathy	Agriculture & Agri-Food Canada	Winnipeg	MB
Gerbrandt	Marvin	Toronto Dominion Bank	Winnipeg	MB
Gibson	Ron	R.J. O'Brien & Associates Inc.	Calgary	AB
Gingera-Beauchemin	Dori	Manitoba Agriculture and Food	Winnipeg	MB
Girardin	Marc	Canada Steamship Lines Inc.	Winnipeg	MB
Gorme	Frank	FAS, USDA	Washington	DC
Gosnell	Dustin	University of Saskatchewan	Saskatoon	SK

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Gracey	Charlie	Canadian Beef Grading Agency	Kanata	ON
Gray	Karen	Statistics Canada	Winnipeg	MB
Gross	Eron	Canadian Wheat Board	Regina	SK
Gunvaldsen	Carol	Manitoba Agriculture and Food	Winnipeg	MB
Habstritt	Charles	University of Minnesota	Crookston	MN
Hall	Barry	Flax Council of Canada	Winnipeg	MB
Hallick	James	Saskatchewan Association of Rural Municipalities	Sturgis	SK
Halpenny	Tom	Canadian Wheat Board	Saskatoon	SK
Halstead	Brett	United Grain Growers	Nokomis	SK
Halyk	Micheal	Canadian Wheat Board	Melville	SK
Hamilton	Tom	USWA / TCU Unit Lodge #650	Thunder Bay	ON
Hansen	Betty	South Dakota Soybean Research	Sioux Falls	SD
Hanson	Terry	Canadian Wheat Board	Fillmore	SK
Harder	Butch	Canadian Wheat Board	Lowe Farm	MB
Hardy	Fred	Manitoba Agriculture and Food	Winnipeg	MB
Hardy	Neal	Saskatchewan Association of Rural Municipalities	Hudson Bay	SK
Harrison	William	Manitoba Farm Mediation Board	Holmfield	MB
Hayes	Bruce	Agriculture & Agri-Food Canada	Ottawa	ON
Heck	Teri	United Grain Growers Ltd.	Calgary	AB
Helfrich	Greg	Masterfeeds	Calgary	AB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

<b>Surname</b>	<b>Firstname</b>	<b>Organization / Company</b>	<b>City</b>	<b>Province / State</b>
Henry	Don	Cargill Limited	Winnipeg	MB
Hill	Larry	Canadian Wheat Board	Swift Current	SK
Hill	William	United Grain Growers	Winnipeg	MB
Hilton	David	Canadian Wheat Board	Toronto	ON
Holdgreve	Chris	Wheat Export Trade Education Committee	Washington	DC
Honey	Janet	Manitoba Agriculture and Food	Winnipeg	MB
Hugg	Harold	Saskatchewan Highways and Transportation	Regina	SK
Hundeby	Ron	Saskatchewan Pulse Growers Board	Elbow	SK
Hyde	Bob	Scott Wolfe Management Inc.	Headingley	MB
Irvine	John	Agriculture & Agri-Food Canada	Ottawa	ON
Irving	Daye	Winnipeg Commodity Exchange	Winnipeg	MB
Jacobson	Leslie	Manitoba Rural Adaptation Council	Winnipeg	MB
Jategaonkar	Lisa	Ag-West Biotech Inc.	Saskatoon	SK
Jenkins	Paul	Bank of Canada	Ottawa	ON
Jetten	Ronald	Louis Dreyfus Canada Ltd.	Calgary	AB
Johns	Jason	Saskatchewan Agriculture and Food	Regina	SK
Johnson	Ronald	Duluth Seaway Port Authority	Duluth	MN
Johnson	Terry	Producer	Elkhorn	MB
Kaastra	Iebeling	R.J. O'Brien & Associates Inc.	Calgary	AB
Kalisvaart	Michael	Delegate - Agricore	Gibbons	AB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

<b>Surname</b>	<b>Firstname</b>	<b>Organization / Company</b>	<b>City</b>	<b>Province / State</b>
Kapitany	Marilyn	Canadian Grain Commission	Winnipeg	MB
Keith	Ross	Nicor Group	Regina	SK
Keyowski	Lynette	University of Saskatchewan	Saskatoon	SK
Kibbins	Charlene	MACC	Brandon	MB
Kidd	Dan	Montana Wheat and Barley Commission	Great Falls	MT
Kirkpatrick	Bruce	Producer	Bowsman	MB
Kjarsgaard	Matt	Canadian Wheat Board	Winnipeg	MB
Klimack	Rick	Bank of Montreal	Winnipeg	MB
Klimpke	Kent	AgPro Grain	Winnipeg	MB
Kostal	Greg	Sparks Companies, Inc.	Winnipeg	MB
Krause	Michael	Westelm Farms	Wetaskiwin	AB
Kuntz	Grant	University of Saskatchewan	Saskatoon	SK
Langrell	Doug	Canadian Grain Commission	Winnipeg	MB
Larsen	Ken	National Farmers Union	Benalto	AB
Larson	Eric	University of Saskatchewan	Saskatoon	SK
Legras	Guy	Office of the Auditor General	Winnipeg	MB
Lennox	Glenn	Agriculture & Agri-Food Canada	Winnipeg	MB
Lewicki	David		Thunder Bay	ON
Lingenfelter	The Hon. Dwain	Minister of Agriculture & Food Province of Saskatchewan	Regina	SK
Liu	Maggie	Agriculture & Agri-Food Canada	Winnipeg	MB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Lockhart	Darwin	Sparks Companies, Inc.	Winnipeg	MB
Lowe	Gordon	Producer	Outlook	SK
Lowe	Valarie	Producer	Outlook	SK
Lowes	Brent	Potpourri Farms Ltd.	Quill Lake	SK
Ludwick	Eugene	Prince Rupert Port Authority	Prince Rupert	BC
Luntz	Don	Agricore	Forestburg	AB
Luzny	Diane	Canadian Wheat Board	Winnipeg	MB
Lywak	Martha	Office of the Auditor General	Winnipeg	MB
MacGillivray	Ann	CN Rail	Winnipeg	MB
Mackie	Tom	Northern Sales Co. Ltd.	Winnipeg	MB
Macklin	Art	Canadian Wheat Board	Grande Prairie	AB
Maendel	Henry	Manitoba Pork Marketing	Winnipeg	MB
Magnusson	Brad	Central Credit Union of Manitoba	Winnipeg	MB
Makowsky	Mike	Saskatchewan Highways and Transportation	Regina	SK
Manchur	Jim	Producer	Gilbert Plains	MB
Marit	David	Saskatchewan Association of Rural Municipalities	Fife Lake	SK
Mayo	Jerry	Producer	Hazenmore	SK
McAllister	Angus	Environics International Ltd.	Toronto	ON
McAuley	Owen	Manitoba Farm Mediation Board	McAuley	MB
McClure	Denise	Bank of Montreal	Toronto	ON

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
McCreary	Ian	Canadian Wheat Board	Bladworth	SK
McCullough	John	Office of the Auditor General	Winnipeg	MB
McGregor	Doug	Bunge du Canada Ltée	Québec City	PQ
McKenzie	Bob	Manitoba Agriculture and Food	Winnipeg	MB
McLean	Kayla	University of Saskatchewan	Saskatoon	SK
McLoughlin	Daryl	Inland Terminal Group	Winnipeg	MB
McPhee	Dennis	Seaway Marine Transport	St. Catharines	ON
Megaw	Lewis	Export Development Corporation	Winnipeg	MB
Menzie	Gord	Canadian Wheat Board	Winnipeg	MB
Mielitz	Sandi	Canadian National	Winnipeg	MB
Mielke	Thomas	Oil World	Hamburg	Germany
Miles	Gord	Canadian Wheat Board	Winnipeg	MB
Minogue	Lyle	Saskatchewan Pulse Growers	Lacadena	SK
Morris	Brian	University of Saskatchewan	Saskatoon	SK
Morrison	Ian	Agricore Cooperative Ltd.	Winnipeg	MB
Morrissey	Rob	Manitoba Crop Insurance Corp.	Portage la Prairie	MB
Motiuk	Ken	United Grain Growers	Mundare	AB
Myer	Rod	Agriculture & Agri-Food Canada	Ottawa	ON
Nagel	Hartmann	Canadian Grain Commission	Woking	AB
Nicholson	Bill	Canadian Wheat Board	Shoal Lake	MB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Nixon	Ken	Ontario Wheat Producers Marketing Board	Chatham	ON
O'Brien	Bob	R. J. O'Brien and Associates Inc.	Chicago	IL
Oakley	Bill	Maple Leaf Pork	Burlington	ON
Oleson	Brian	University of Manitoba	Winnipeg	MB
Oleson	Fred	Agriculture & Agri-Food Canada	Winnipeg	MB
Olsen	Michael	Canadian Wheat Board	Winnipeg	MB
Orr	Wallace	Producer	Crystal City	MB
Ozeroff	Mich	Saskatchewan Wheat Pool	Regina	SK
Paddock	Brian	Agriculture & Agri-Food Canada	Ottawa	ON
Palmer	Grant	Manitoba Agriculture and Food	Winnipeg	MB
Parrish, Jr.	Bill	Parrish & Heimbecker Ltd.	Winnipeg	MB
Paterson	Alexander	N. M. Paterson & Sons Limited	Thunder Bay	ON
Payne	Glenn	Saskatchewan Agriculture & Food	Regina	SK
Peiffer	Roy	Robin Hood Multifoods	Minnetonka	MN
Penner	Henry	United Grain Growers	Morden	MB
Perillat	Brian	University of Saskatchewan	Saskatoon	SK
Pettinger	Rob	Delegate - Agricore	Elgin	MB
Pietryk	Jim	Canadian Wheat Board	Winnipeg	MB
Poole	Jim	Canadian Wheat Board	Winnipeg	MB
Potts	Carl	University of Saskatchewan	Saskatoon	SK

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

<b>Surname</b>	<b>Firstname</b>	<b>Organization / Company</b>	<b>City</b>	<b>Province / State</b>
Prentice	Barry	Transport Institute University of Manitoba	Winnipeg	MB
Price	Dulcie	Optimum Agra Services Ltd.	Winnipeg	MB
Prior	Brent	CIBC	Winnipeg	MB
Rankin	Les	Rankinfile Consulting Services	Winnipeg	MB
Ransom	Jeff	C.I.B.C.	Brandon	MB
Redmond	Margaret	Canadian Wheat Board	Winnipeg	MB
Rennick	Garry	Omnitrax Canada	Winnipeg	MB
Reske	Larry	National Farmers Union	Beausejour	MB
Reynolds	Tami	Canadian Wheat Board	Winnipeg	MB
Richardson	Lloyd	Producer	St. Benedict	SK
Ritter	Ken	Canadian Wheat Board	Kindersley	SK
Robertson	Doug	Delegate - Agricore	Boissevain	MB
Robidoux	René	Caisse populaire Provencher Ltée	St. Agathe	MB
Roehle	Bob	Canadian Wheat Board	Winnipeg	MB
Rosher	Patty	Canadian Wheat Board	Winnipeg	MB
Rutter	Blair	United Grain Growers	Winnipeg	MB
Sato	Shuichi	Nissho Iwai American Corporation	Portland	OR
Sauder	David	Manitoba Crop Insurance Corporation	Portage la Prairie	MB
Schatzke	Albert	Canadian Grain Commission	Winnipeg	MB
Scheurer	Edgar	Manitoba Canola Growers Association	Dugald	MB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Scowcroft	Bill	Canadian Grain Commission	Winnipeg	MB
Senebald	Brian	Dominion Malting Limited	Winnipeg	MB
Shaw	Gill	MACC	Brandon	MB
Silver	Neil	Agricore	Winnipeg	MB
Siminaro	Nancy	S.P.B. Meal Ltd.	Boucherville	PQ
Skrypetz	Stan	Agriculture & Agri-Food Canada	Winnipeg	MB
Stacey	Brian	Canadian Wheat Board	Winnipeg	MB
Stephens	Dennis	Meadowood Consultants	Oakbank	MB
Stewart	Roz	Northern Sales Co. Ltd.	Winnipeg	MB
Stow	Doug	Canadian Grain Commission	Winnipeg	MB
Sullivan	James	EDF Man International Inc.	Kansas City	MO
Sutton	Robert	Westcan Malting Limited	Alix	AB
Svenkeson	Gary	Saskatchewan Canola Growers Association	Saskatoon	SK
Tepley	Tonya	Cargill Limited	Winnipeg	MB
Thompson	Wayne	University of Saskatchewan	Saskatoon	SK
Tjaardstra	John	International Grains Council	London	UK
to be determined		Agriculture & Agri-Food Canada	Winnipeg	MB
Toens	Joe	XCAN Grain Pool Ltd.	Winnipeg	MB
Toews	Bill	Harambee Farms	Kane	MB
Tole	Glenn	Canadian Wheat Board	Grande Prairie	AB

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

<b>Surname</b>	<b>Firstname</b>	<b>Organization / Company</b>	<b>City</b>	<b>Province / State</b>
Tome	George	Scotiabank	Winnipeg	MB
Trefiak	Thad	Saskatchewan Wheat Pool	Leross	SK
Tremere	Arnold	Canadian International Grains Institute	Winnipeg	MB
Trotter	Bruce	Farmers Grain Dealers Inc.	Blenheim	ON
Tyrchniewicz	Ed	University of Manitoba Dept. of Agricultural Economics	Winnipeg	MB
Ulrich	Richard	International Grains Council Conference 2000	Ottawa	ON
Vaagen	Jeffrey	Canadian Pacific Railway	Winnipeg	MB
Van Alstyne	Scott	United Grain Growers	Winnipeg	MB
Van Rosmalen	Tony	Bank of Nova Scotia	Winnipeg	MB
Wagner	Albert	Delegate - Agricore	Stony Plain	AB
Wahbi	Hashim	Ababasen International Trading & Marketing	Toronto	ON
Waite	Dennis	Agriculture & Agri-Food Canada	Ottawa	ON
Waldner	Jake	Producer		
Ward	Jeff	Alberta Agriculture, Food & Rural Development	Edmonton	AB
Warkentine	Gary		Lockport	MB
Warren	Shannon	AdFarm	Calgary	AB
Watt	Dallas	Manitoba Pulse Growers	Reston	MB
Wauters	Eugene	Alberta Association of Municipal Districts & Counties	Edmonton	AB
Welke	Donna	Canadian Grain Commission	Regina	SK
Wensley	Mitch	Agriculture & Agri-Food Canada	Ottawa	ON

**Participants List -- Grain World 2000**  
**February 27 - 29, 2000**

Surname	Firstname	Organization / Company	City	Province / State
Weseen	Simon	University of Saskatchewan	Saskatoon	SK
Weselake	Jonathan	Western Opinion Research Inc.	Winnipeg	MB
Westdal	Paul	Canadian International Grains Institute	Winnipeg	MB
White	Brian	Canadian Wheat Board	Winnipeg	MB
White	Rick	Agricore	Winnipeg	MB
Wieben	Greg	Western Canadian Wheat Growers Association	Fairview	AB
Wilkes	Garry	TD Bank Financial Group	Winnipeg	MB
Winsor	Doug	Saskatchewan Agriculture & Food	Regina	SK
Wolf	Curtis	Anheuser-Busch Companies Inc.	St. Louis	MO
Wolfe	Bob	Saskatchewan Agriculture & Food	Weyburn	SK
Woods	Sherry	Louis Dreyfus Canada Ltd.	Rathwell	MB
Wowchuk	The Hon. Rosann	Minister of Agriculture and Food Province of Manitoba	Winnipeg	MB
Young	Geoff	Manitoba Canola Growers Association	Carman	MB
Young	Glenn	Manitoba Farm Mediation Board	Cypress River	MB
Zeinstra	John	Delegate - Agricore	Picture Butte	AB
Zilkey	Gary	Manitoba Agriculture and Food	Winnipeg	MB